

Appendix A – Mitigation Monitoring and Reporting Program and Project Design Elements

Trinity River Channel Rehabilitation Sites: Lower Steiner Flat (River Mile 90.2-91.3) and Upper Junction City (River Mile 79.8-80.4)

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Mitigation Monitoring and Reporting Program

Introduction

The first part of this document comprises the Mitigation Monitoring and Reporting Program (MMRP) for the Trinity River Channel Rehabilitation Sites: Lower Steiner Flat (River Mile 90.2-91.3) and Upper Junction City (River Mile 79.8-80.4) Project (the Proposed Project). The purpose of providing the MMRP as an appendix is to facilitate its use as a stand-alone document, which clearly expresses to the reader the mitigation responsibilities of the Bureau of Reclamation (Reclamation), and Regional Water Quality Control Board – North Coast Region (Regional Water Board) in implementing the project. The mitigation measures listed herein, which are an updated version of those included within the Master EIR (NCRWQCB and USBR 2009), are required by law or regulation and will be adopted by the Regional Water Board when it issues its Notice of Applicability for the project. The second part of this document is comprised of project design elements that shall be implemented as part of the Proposed Project. In general, Chapter 3 mitigation measures in this EA/IS correspond to Chapter 4 mitigation measures in the Master EIR. Consequently, Master EIR numeric mitigation measure coding corresponds to mitigation measures that are numerically one integer less than in this document. For example, Master EIR mitigation measure 4.5-1a corresponds to this document's 3.5-1a. While numerically different, the Appendix A mitigation measures in this EA/IS, are meant to mitigate the same impacts as those identified in the Master EIR. Consequently, these mitigation measures are only different to the extent necessary to tailor the mitigation measures to the site specific conditions.

Mitigation is defined by the California Environmental Quality Act (CEQA) – Section 15370 as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project
- Compensates for the impacts by replacing or providing substitute resources or environments

The mitigation program identified in the MMRP to reduce potential project impacts consists of mitigation measures, project design elements, and construction criteria and methods.

Mitigation measures provided in this MMRP have been identified in Chapter 3, Affected Environment and Environmental Consequences of the Proposed Project EA/IS, as feasible and effective in mitigating project-related environmental impacts. This MMRP includes discussion of the following: legal requirements, intent of the MMRP, development and approval process for the MMRP, the authorities and responsibilities associated with the implementation of the MMRP, a description of the mitigation summary table, project design elements, construction criteria and methods, and resolution of noncompliance complaints.

Legal Requirements

The legal basis for the development and implementation of the MMRP lies within CEQA (including the California Public Resources Code). Sections 21002 and 21002.1 of the California Public Resources Code state:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects; and
- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.
- Section 21081.6 of the California Public Resources Code further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.
- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

Intent of the Mitigation Monitoring and Reporting Program

The MMRP is intended to satisfy the requirements of CEQA as they relate to the project. It is anticipated to be used by Reclamation and Regional Water Board staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

The primary objective of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for monitoring of construction activities as needed, on-site identification and resolution of environmental problems, and proper reporting to lead agency staff.

Development and Approval Process

The timing elements for implementing mitigation measures and the definition of the approval process have been provided in detail through this MMRP to assist staff from Reclamation and the Regional Water Board by providing the most usable monitoring document possible.

Authorities and Responsibilities

As the project proponent, Reclamation, functioning as the TRRP, will have the primary responsibility for the execution and proper implementation of the MRRP. The Regional Water Board may provide Reclamation with support, as warranted. Reclamation will be responsible for the following activities:

- Coordination of monitoring activities
- Management of the preparation and filing of monitoring compliance reports
- Maintenance of records concerning the status of all approved mitigation measures

Summary of Monitoring Requirements

Table A-1, which follows, summarizes the mitigation measures and associated monitoring requirements for the Proposed Project. The mitigation measures are organized by environmental issue area (i.e., Soils, Water Quality, etc.). Table A-1 is composed of the following four columns:

- **Mitigation Measure:** Lists the mitigation measures identified for each significant impact discussed in the Draft EA/IS for the project. The mitigation numbering system used in the Draft MEIR/Draft EIR is carried forward in this MMRP.
- **Timing/Implementation:** Indicates at what point in time or project phase the mitigation measure will need to be implemented.
- **Responsible Parties (tasks):** Documents which agency or entity is responsible for implementing a mitigation measures and what, if any, coordination is required (e.g., approval from Caltrans). If more than one party has responsibility under a given mitigation measure, the tasks of each individual party is identified parenthetically (e.g., “implementation” or “monitoring”).
- **Verification:** Provides spaces to be initialed and dated by the individual responsible for verifying compliance with each specific mitigation measure.

Resolution of Noncompliance Complaints

Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the project. The complaint shall be directed to Reclamation at the TRRP office (P.O. Box 1300, 1313 South Main Street, Weaverville, CA 96093) and to the Regional Water Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, in written form, providing detailed information on the purported violation. Reclamation and the Regional Water Board shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, Reclamation shall take the necessary action(s) to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

Table A-1. Summary of Mitigation Monitoring Requirements

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.3 Geology, Fluvial Geomorphology, and Soils			
Impact 3.3-2: Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.			
4.3-2a Reclamation will implement the following measures during construction activities: <ul style="list-style-type: none"> • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications. 		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
4.3-2b Reclamation will prepare an erosion and sedimentation control plan (Storm Water Pollution Prevention Plan [SWPPP]). Measures for erosion control will be prioritized based on proximity to the river. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, NMFS, and CDFG) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following measures will be used as a guide to develop this plan: <ul style="list-style-type: none"> • Restore disturbed areas to pre-construction contours to the fullest extent feasible. • Salvage, store, and use the highest quality soil for revegetation. • Discourage noxious weed competition and control noxious weeds. • Clear or remove roots from steep slopes immediately prior to scheduled construction. • Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. • To the fullest extent possible, cease excavation activities during significantly wet or windy weather. • Use bales, wattles, and/or silt fencing as appropriate. • Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. • Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway. • Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be graded and vegetated to reduce the potential for erosion. • Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good 			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.			
Impact 3.3-3: Implementation of the Proposed Project would interfere with existing, proposed, or potential development of mineral resources.			
4.3-3a Reclamation will implement the following measures during construction: <ul style="list-style-type: none"> • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications. 		Reclamation (implementation)	
4.3-3b Reclamation will prepare a SWPPP as stipulated in Mitigation Measure 4.2-2b.			
4.3-3c Reclamation will coordinate with private land owners and owners of active mining claims to discuss future mining plans and develop site-specific measures that can be implemented to avoid or lessen project-related impacts to mineral resources associated with the Trinity River and its tributaries.			
4.5 Water Quality			
Impact 3.5-1: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.			
4.5-1a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2007), is summarized below. <ul style="list-style-type: none"> • Turbidity levels will not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required 			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.			
4.5-1b To ensure that turbidity levels do not exceed the thresholds described above (4.4-1a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.			
4.5-1c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.			
4.5-1d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.			
4.5-1e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: <ul style="list-style-type: none">• Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season.• Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
<p>prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out.</p> <ul style="list-style-type: none"> • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels or other water bodies. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs. 			
Impact 3.5-2: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.			
4.5-2a Turbidity increases associated with project activities will not exceed the water quality objectives for turbidity in the Trinity River Basin (North Coast Regional Water Quality Control Board 2007).			
<p>4.5-2b To ensure that turbidity levels do not exceed the threshold following construction, Reclamation will monitor turbidity and total suspended solids during and after representative rainfall events to determine the effect of the project on Trinity River water quality. At a minimum, field turbidity measurements will be collected whenever a visible increase in turbidity is observed.</p> <ul style="list-style-type: none"> • If increases in turbidity and total suspended solids are observed as a result of erosion from constructed features, field turbidity measurements will be collected 50 feet upstream of a point adjacent to the end of the feature and 500 feet downstream of the feature. • If the grab sample indicates that turbidity levels exceed the established thresholds identified in the Basin Plan, the Regional Water Board will be notified. The need to implement erosion control measures for turbidity that is expected to result from overland river flows (versus surface run-off) will be evaluated with Regional Water Board staff to determine if remediation measures are needed. 			
<p>4.5-2c To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas consistent with the requirements outlined in at the end of this appendix (Design Elements and Construction Criteria). Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.</p>			
Impact 3.5-3: Construction of the proposed project could cause contamination of the Trinity River from hazardous materials spills.			
4.5-3a Reclamation will prepare and implement a spill prevention and containment plan in accordance with applicable federal and state requirements.			
4.5-3b Reclamation will ensure that any construction equipment that will come in contact with the Trinity River be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option.			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.5-3c Reclamation will ensure that hazardous materials, including fuels, oils, and solvents, not be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gas pumps and engines will be stored and maintained on impermeable barriers so that any leaking petroleum products are isolated from the ground. In addition, the construction contractor will be responsible for maintaining spill containment booms onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.			
Impact 3.5-5: Construction and maintenance of the proposed project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.			
Water quality Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, 4.5-1e, 4.5-2a, 4.5-2b, 4.5-2c, 4.5-3a, 4.5-3b, and 4.5-3c described above shall be implemented to protect the beneficial uses of the Trinity River.			
3.6 Fishery Resources			
Impact 3.6-1: Implementation of the proposed project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.			
4.6-1a The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15).		Reclamation (implementation)	
4.6-1b Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.			
Impact 3.6-2: Implementation of the proposed project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-2a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2007), is summarized below. <ul style="list-style-type: none"> Turbidity levels shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. 			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
<ul style="list-style-type: none"> Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level. 			
<p>4.6-2b To ensure that turbidity levels do not exceed the thresholds described above (4.6-2a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels.</p> <p>If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.</p>			
<p>4.6-2c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.</p>			
<p>4.6-2d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.</p>			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.6-2e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: <ul style="list-style-type: none"> • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels. • Decomact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs. 			
Impact 3.6-3: Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-3a Construction specifications will include the following measures to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: <ul style="list-style-type: none"> • Equipment and materials will be stored away from wetland and surface water features. • Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted in an area at least 150 feet away from waters of the Trinity River or within an appropriate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier. • The contractor will develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor will be responsible for immediate containment and removal of any toxins released. 		Reclamation (implementation)	
Impact 3.6-4: Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.			
4.6-4a To avoid impacts to spawning and incubating salmonids, instream work will only occur between July 15 and September 15.			
4.6-4b To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area.			
4.6-4c Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. This will be accomplished by minimizing vehicle traffic and by operating equipment and vehicles slowly and deliberately to alert and scare adult and juvenile salmonids away from the			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
crossing area, or by having a person wade ahead of equipment to scare fish away from the crossing area.			
4.6-4d To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area.			
4.6-4f Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5-year or less frequent event (i.e., $Q \geq 6,000$ cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.		Reclamation (implementation)	
Impact 3.6-5: Implementation of the Proposed Project would result in the permanent and temporary loss of SRA for anadromous salmonids.			
4.6-5a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes necessary for the projects to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and wetland waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain flagged areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.6-5b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.			
4.6-5c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFG, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.			
Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.			
4.6-6a Low water crossings will only be constructed and used between July 15 and September 15. Fill gravels used on the low-water crossings, streambeds, and stream banks will be composed of washed, spawning-sized gravels from a local Trinity Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials used for bridges will be native alluvium obtained from within the boundaries of the Remaining Phase 1 or Phase 2 sites.			
4.6-6b Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage.			
4.6-6c The number of vehicle and equipment crossings of the Trinity River will be minimized.			
4.6-6d Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000), or result in a temporary impairment to fish passage related to a bridge.			
3.7 Vegetation, Wildlife, and Wetlands			
Impact 3.7-1: Construction activities associated with the Proposed Project could result in the loss of jurisdictional waters including wetlands.			
4.7-1a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.7-1b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net loss of riparian habitat and			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.			
4.7-1c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. Monitoring and maintenance of planted vegetation will take place in the first several years after planting. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFG, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of wetlands at the end of a 5 year period and no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be re-delineated 5 years after project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after planting and wetland delineation 5 years after project implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian habitat and jurisdictional wetlands within boundaries established for TRRP rehabilitation sites after 10 years.			
Impact 3.7-3: Construction of the Proposed Project could result in the loss of individuals of a special-status plant species.			
4.7-3a A qualified botanist will conduct a minimum of two pre-construction surveys to determine if special-status plant species occur within the project sites. Surveys shall be conducted during the blooming periods of the plants potentially occurring at the sites to determine (1) if the species occur and (2) the quality, location, and extent of any populations. If a special-status plants species is found within 250 feet of any proposed disturbance, Mitigation Measures 4.7-3b and 4.7-3c will be implemented.		Reclamation (implementation)	
4.7-3b Prior to the start of disturbance, exclusionary fencing will be erected around the known occurrences. If necessary, a qualified botanist shall be present to assist with locating these special-status plant populations. The exclusionary fencing will be periodically inspected throughout each period of construction and be repaired as necessary.			
4.7-3c If a population cannot be fully avoided, Reclamation will retain a qualified botanist to (1) determine appropriate salvage and relocation measures and (2) implement appropriate measures in coordination with CDFG staff.			
Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (<i>Empidonax traillii</i>).			
4.7-4a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, Mitigation Measure 4.7-4b will be implemented.		Reclamation (implementation)	
4.7-4b Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
breeding season cannot be completely avoided, Mitigation Measures 4.7-4c and 4.7-4d will be implemented.			
4.7-4c A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds . If an active nest is found, CDFG will be contacted prior to the start of construction to determine the appropriate mitigation measures.			
4.7-4d If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-5: Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog (<i>Rana boylei</i>).			
4.7-5a If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary.		Reclamation (implementation)	
4.7-5b In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFG prior to construction.			
4.7-5c Mitigation measures identified in Section 3.5 (Water Quality) of this EA/IS for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for potential indirect impacts to dispersal habitat for the foothill yellow-legged frog due to sedimentation and accidental spills.			
4.7-5d Mitigation measures associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-6: Construction activities associated with the Proposed Project could result in impacts to the western pond turtle (<i>Actinemys marmorata pallida</i>).			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-6a A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.		Reclamation (implementation)	
4.7-6b Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.			
4.7-6c During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFG prior to construction.			
4.7-6d Mitigation measures presented in Section 4.5 (Water Quality) for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for the potential indirect impacts to potential dispersal habitat due to sedimentation and accidental spills.			
4.7-6e The mitigation measure associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-7: Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift (<i>Chaetura vauxi</i>), California yellow warbler (<i>Dendroica petechia</i>), and yellow-breasted chat (<i>Icteria virens</i>).			
4.7-7a Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-7b will be implemented.		Reclamation (implementation)	
4.7-7b Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, Mitigation Measures 4.7-7c and 4.7-7d will be implemented.			
4.7-7c A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest.			
4.7-7d If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-8: Construction activities associated with the Proposed Project could result in impacts to nesting bald eagle (<i>Haliaeetus leucocephalus</i>) and northern goshawk (<i>Accipiter gentilis</i>).			
4.7-8a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-8b will be implemented.		Reclamation (implementation)	
4.7-8b Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from February 15 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and northern goshawks will be expected. If it is not possible to schedule construction during this time, mitigation measures 4.7-8c and 4.7-8d will be implemented.			
4.7-8c Pre-construction surveys for nesting northern goshawks will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. During this survey, the biologist will inspect all trees immediately adjacent to the impact areas for bald eagle and northern goshawk nests. If an active nest is found within 500 feet of the construction areas to be disturbed by these activities, the biologist, in consultation with the CDFG, will determine the extent of a construction-free buffer zone to be established around the nest.			
4.7-8d If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-9: Construction activities associated with the Proposed Project could result in impacts to special-status bats and the ring-tailed cat (<i>Bassariscus astutus</i>).			
4.7-9a Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special-status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, Mitigation Measures 4.7-9b and/or 4.7-9c will be implemented. CDFG will also be notified of any active bat nurseries within the disturbance zones.		Reclamation (implementation)	
4.7-9b If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
<p>to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.</p>			
<p>4.7-9c Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFG will be contacted for their input. If approved by CDFG, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFG will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.</p>			
<p>Impact 3.7-11: Construction activities associated with the proposed project could result in impacts to BLM and USFS sensitive species (Pacific fisher).</p>			
<p>Mitigations measures identified previously would reduce impacts to BLM and USFS sensitive species to less than significant. Mitigation measures 4.7-4a, 4.7-4b, and 4.7-4c would reduce impacts to the little willow flycatcher to a less than significant level. Mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d would reduce the impacts to the foothill yellow-legged frog to a less than significant level. Mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, and 4.7-6d would reduce the impacts to the western pond turtle to a less than significant level. Mitigation measures 4.7-8a, 4.7-8b, and 4.7-8c would reduce the impacts to the northern goshawk to a less than significant level. Mitigation measures 4.7-9a and 4.7-9b would reduce impacts to special-status bats and the ring-tailed cat to less than significant.</p>		Reclamation (implementation)	
<p>Impact 3.7-13: Implementation of the proposed project could result in the spread of non-native and invasive plant species.</p>			
<p>4.7-13a When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed.</p>		Reclamation (implementation)	
<p>4.7-13b Preclude the use of rice straw in riparian areas.</p>			
<p>4.7-13c Limit any import or export of fill to materials to those that are known to be weed free.</p>			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-13d Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.			
4.7-13e Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.			
4.7-13f Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species.			
4.7-13g Within the first 3 to 5 years post-project, if it is determined that on-site revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.			
3.8 Recreation			
Impact 3.8-1: Construction associated with the proposed project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River.			
4.8-1a Reclamation shall provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local <i>Trinity Journal</i> newspaper prior to the onset of project construction.		Reclamation (implementation)	
4.8-1b Reclamation will repair and/or replace any facilities associated with the Proposed Project that are impacted by project activities. This measure includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.			
Impact 3.8-2: Construction of the proposed project could result in an increased safety risk to recreational users or resource damage to lands within the project boundaries.			
Implementation of Mitigation Measures 4.8-1a and 4.8-1b described above would make this impact less than significant.		Reclamation (implementation)	
Impact 3.8-3: Construction activities associated with the proposed project could lower the Trinity River's aesthetic values for recreationists by			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
increasing its turbidity.			
Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1 would reduce impacts to less than significant.			
3.10 Cultural Resources			
Impact 3.10-2: Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources.			
4.10-2a Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and Reclamation's designated archaeologist will be consulted. Once the find has been identified, Reclamation will be responsible for developing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the PA and in compliance with the NHPA.		Reclamation (implementation)	
4.10-2b If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.			
3.11 Air Quality			
Impact 3.11-1: Construction activities associated with the proposed project could result in an increase in fugitive dust and associated particulate matter (PM₁₀ and PM_{2.5}) levels.			
4.11-1a Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: <ul style="list-style-type: none"> • Inactive construction areas will be watered as needed to ensure dust control. • Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). • Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the 		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
<p>amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to minimize soil erosion, as described in Section 3.3, Geology, Fluvial Geomorphology, and Soils, and Section 3.5, Water Quality.</p> <ul style="list-style-type: none"> • Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. • All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. • Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. • All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the NCUAQMD. • Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints. 			
Impact 3.11-2: Construction activities associated with the proposed project could result in an increase in construction vehicle exhaust emissions.			
4.11-2a Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).		Reclamation (implementation)	
Impact 3.11-3: Construction activities and removal of vegetation associated with the proposed project could result in vegetative waste materials that managers may decide to burn.			
4.11-3a Vegetative piles to be burned will consist only of dried vegetative materials. Burn piles will be no larger than 10 feet in diameter. Field personnel will be on site during all hours of burning, and materials necessary to extinguish fires will be available at all times.		Reclamation (implementation)	
4.11-3b In general, all requirements of a NCUAQMD "NON-Standard" burn permit will be met for burning. Burn management planning will include but not be limited to the following: <ul style="list-style-type: none"> • Ensure that burning occurs only on approved burn days as defined by the NCUAQMD (determined by calling 1-866-BURN-DAY). • Burning will only occur during suitable conditions to ensure control of ignited fires. For instance, water to wet the litter and duff layer and penetrate the mineral soil layer to 1/4 inch or more will be present, wind speeds will be low (<10 mph), and temperature will be low (<80 °F). • Piles will be covered with a 5-foot x 5-foot sheet of 4-mil polyethylene plastic to promote drying of the slash. At least 3/4 of each pile surface will be covered and the plastic anchored to preserve a dry ignition point. Dry fuel conditions will minimize smoke emissions. • Slash piles will not be constructed on logs, stumps, or talus slopes within 25 feet of wildlife trees with nest structures, in roadways, or in drainage ditches. Piles will not be placed within 10 feet of trees intended to be saved (reserved trees) or within 25 feet of a unit boundary. 			

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.11-3c Reclamation will notify the public each day that burning is to occur. Signs or personnel will notify residents and traffic on nearby access routes.			
Impact 3.11-5: Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.			
4.11-5a Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session.		Reclamation (implementation)	
4.11-5b Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m.			
4.11-5c Reclamation will notify residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.			
4.11-5d Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.			
3.12 Aesthetics			
Impact 3.12-1: Implementation of the proposed project could result in the degradation and/or obstruction of a scenic view from key observation areas.			
Implementation of mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c and 4.8-3a, 4.8-3b, 4.8-3c, 4.8-3d, 4.8-3e, and 4.8-3f described above will reduce the impacts to visual resources to less than significant.		Reclamation (implementation)	
3.14 Noise			
Impact 3.14-1: Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.			
4.14-1a Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours, as needed.		Reclamation (implementation)	
4.14-1b Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices.			
4.14-1c Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).			
3.15 Public Services and Utilities/Energy			
Impact 3.15-3: Implementation of the proposed project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.			
4.15-3a Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers.		Reclamation (implementation)	

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.15-3b Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.			
4.15-3c Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.			
3.16 Transportation/Traffic Circulation			
Impact 3.16-2: Construction activities would generate short-term increases in vehicle trips.			
4.16-2a Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that the gravel trucks maintain a speed limit of 15 mph on residential roads and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.			
Impact 3.16-4: Construction activities would increase wear and tear on local roadways.			
4.16-4a Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes, and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.		Reclamation (implementation)	
Impact 3.16-5: Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.			
4.16-5a Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits through the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. Reclamation will obtain an encroachment permit from Caltrans to work within the SR-299 easement, and from Trinity County within the Lower Steiner Flat Road easement. These permits will require traffic control and signage to meet California state standards.		Reclamation (implementation)	

Project Design Elements

Project design elements are specific design features proposed by the project applicant and incorporated into the project to prevent the occurrence of, or reduce the significance of potential environmental effects. Because project design elements have been incorporated into the project, they do not constitute mitigation measures as defined by CEQA. However, project design elements are identified to ensure that they are included in the MMRP to be developed and implemented as part of the Proposed Project. The design elements discussed below are common to the Proposed Project. These elements are excerpted from Chapter 2 of the Draft Master EIR.

Description of Common Activities and Construction Criteria and Methods

Common Activities

Vegetation Removal

Vegetation removal would involve the following:

- Remove vegetation to provide access to activity areas using a combination of manual labor and heavy equipment (i.e., chainsaw, excavator, and vegetation masticator).
- Remove stumps, roots, and vegetative matter to allow river scour on excavated floodplain surfaces. Some LWD would be retained for use in the floodplain to enhance fish habitat.
- Dispose of removed vegetation by chipping, hauling offsite, burning, burying within spoil areas, or other appropriate methods. Reclamation would continue to work with local agencies to encourage the efficient use of chipping as a priority method of disposing of vegetative waste.
- Protect vegetation designated for preservation within clearing limits. Vegetation outside the clearing limits would be preserved and protected.
- Mechanically remove submerged roots from river fringe areas with ripping bars or excavator buckets. Equipment chassis (i.e., tires, tracks) would remain outside of the wetted portion of the river channel when removing submerged roots.

Water Use

Water would be used at all sites, in accordance with the following:

- Riparian water rights held by public and private landowners on the Trinity River would be used to obtain Trinity River water to support restoration. Dust abatement water would be obtained from on-site seep wells or the Trinity River. When drafting from the Trinity River, pump intakes would be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 feet per second (fps).
- In the event irrigation is necessary for revegetation efforts, the primary water source would be the Trinity River. Any surface water sources used for irrigation would be

developed in order to comply with the water rights of land management agencies and landowners. Pump intakes would be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Monitoring

The ROD provided a restoration strategy for the TRRP but did not identify methods for assessing the effectiveness of the management actions in achieving TRRP goals or management targets. Instead, it directed the TRRP to organize assessments around the principles of AEAM and to use this to rigorously assess the river's response to management actions. The Integrated Assessment Plan (IAP) provides the basis for applying the AEAM principles outlined in the ROD.

These principles would be applied to quantitatively determine the overall status and trend of river system attributes relative to TRRP objectives, using appropriate data to describe each attribute, with data collected based upon scientifically defensible monitoring designs. The causal relationship between rehabilitation of the fluvial nature of the river and increasing salmonid production would be the major focal point for monitoring and modeling. The focus of the IAP is to identify key assessments that:

- Evaluate long-term progress toward achieving program goals and objectives; and
- Provide short-term feedback to improve program management actions by testing key hypotheses and reducing management uncertainties.

The IAP provides a general framework for integrating and linking assessments across monitoring domains. Integration of assessments would be essential for evaluating the TRRP's overall restoration strategy, involving coordinated actions to support multiple ecosystem processes and components. This integration allows development of coordinated sampling designs and assessments that serve multiple or complementary objectives, and is intended to improve the understanding of qualitative and quantitative functional relationships associated with the mainstem Trinity River.

The IAP framework focuses on six key elements; each of these would be integrated into the Mitigation Monitoring and Reporting Plan (MMRP) to ensure that authorized activities are consistent with the AEAM. Key elements of the IAP include:

1. Create and maintain spatially complex channel morphology.
2. Increase/improve habitats for freshwater life stages of anadromous fish to the extent necessary to meet or exceed production goals.
3. Restore and maintain natural production of anadromous fish populations.
4. Restore and sustain the natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.
5. Establish and maintain riparian vegetation that supports fish and wildlife.

6. Rehabilitate and protect wildlife habitats and maintain or enhance wildlife populations following implementation.

Additional information on the IAP is available on the TRRP website:

<http://www.trrp.net/science/IAP.htm>

Design Elements

Attachment 1 following the appendices in Volume IV of the Trinity River Master EIR is a glossary of design and construction terms for use by the design team.

Hydraulics

The Proposed Project would occur in areas that FEMA has designated as Special Hazard Zones AE and X, as described in Section 3.2 of this document. In the Zone AE areas, Reclamation has established a design criterion stating that not only would the County's floodplain ordinance be followed, but implementation of the Proposed Project would not increase the flood risk for the community. This criterion resulted in a stipulation that coarse sediment and excavated material would be strategically placed to ensure that 100-year flood elevations would not increase over current conditions. As previously described, the site boundaries generally conform to the river corridor, bounded by prominent geographic features such as roads and fences.

The design of the activity areas was based on an understanding of the relationships between the flow regime and the hydrologic/hydraulic characteristics of the action. A fundamental constraint was to *do nothing to increase the flood risk in the general vicinity, and to not raise the water surface elevation above the current FEMA estimated 100-year base flood elevation*. Evaluation of the Proposed Project requires comparing estimated seasonal base flows and estimated return-period flows. USACE's Hydraulic Engineering Center River Analysis System (HEC-RAS) hydraulic model would be used by the design team during final design activities to predict changes in flood elevations at various points along the project reach. Table A-2 lists the components of the flow regime, the seasonal or other periodic return intervals, and the flow rates that would be used during final design to ensure that the action meets the flood constraints described above.

Table A-2. Estimated Mainstem Trinity River Flow Conditions Used for Design.		
FLOW DESCRIPTION	FLOW EVENT	FLOW RATE (CFS)
Summer base flow ^a (July 22 to October 15 of each year)	Q _s	450
1.5-year return interval design flow	Q _{1.5}	6,000
Estimated FEMA 100-year flow below Rush Creek	Q ₁₀₀	19,300
Estimated FEMA 100-year flow below Grass Valley Creek	Q ₁₀₀	23,600

^a Base flow defined as cfs from TRD release and accretion flow
Q=return interval

A HEC-RAS model for the Trinity River from Lewiston Dam to the North Fork Trinity River was developed by DWR and provided to the TRRP as part of the administrative record. This model was calibrated to match measured water-surface elevations (WSEs) in the Trinity River

within and adjacent to the site boundaries for the design flow. Since WSEs have not been measured (validated) for the 100-year flow, the predicted WSEs are based on the output of the model using carefully selected Manning's "n" values that reflect the overbank conditions at each site. The model incorporates empirical data from surveyed cross-sections, including bathymetric and overbank/floodplain topography in the general vicinity of the rehabilitation sites. To obtain WSEs for design flows, the model was calibrated using surveyed WSEs and known flows (from gage data). The model was determined to be accurate for the level of evaluation and design required.

There are several significant flow conditions that are important to the design of the Proposed Project. Two of the most important flow conditions are summertime low flows of about 450 cfs, which is the release from Lewiston Dam, and the 1.5-year-event (ordinary high water) flow of 6,000 cfs, as measured below Rush Creek. The design team regards the design flows portrayed in Table A-1 as the "best available information" per FEMA requirements. The FEMA Q100 "near Douglas City" (38,500 cfs) was established in the 1976 USACE report (USACE 1976) used by FEMA to develop the current FIRMs for the Trinity River. The 6,000 cfs 1.5-year event is based on the ROD flow release. This flow information provides the basis for the designs incorporated into the Proposed Project.

The HEC-RAS hydraulic model was developed and calibrated for the existing conditions to calculate the WSE at various flow releases. The calibration was based on water-surface profiles surveyed at low flow and water profiles and points surveyed at different flows, ranging from 4,500 cfs to 10,000 cfs releases from Lewiston Dam. After the model was properly calibrated, various WSEs were determined for the activity areas and used to develop the design topography. The illustrations at the end of this chapter portray the design topography concepts. The final designs would ensure that constructed surfaces are self-draining in order to minimize potential fish stranding.

Roadway Approaches

As an alternative to disposing of excavated materials onsite, materials may be hauled to commercially approved off-site locations. This option would reduce the impact of spoiling excavated materials in upland habitats. Hauling a portion of excavated materials generated under the Proposed Project could require substantial truck traffic to off-site locations. The traffic would be staged over the project duration, generally between August 1 and November 15. Traffic control measures would be applied in accordance with BLM, Trinity County, and Caltrans requirements.

Recreation Facilities

As appropriate, recreation facilities (e.g., parking areas, access trails, picnic areas) affected by project activities would be returned to the same level of service as those offered prior to project implementation. Reclamation, in consultation with the BLM, DWR, and CDFG, could enhance one or more of these facilities consistent with project objectives. Examples of enhancement could be updated signage, surfacing of trails or parking areas with permeable materials, improvements to fishing access locations or establishment of interpretive features intended to

increase public awareness of the ongoing efforts to restore the Trinity River.

Drainage

As appropriate, culverts or other drainage structures would be constructed at temporary stream crossings or cross-drainage channels to allow for unimpeded surface drainage.

Rights-of-Way/Easements

Prior to construction, formal realty agreements would be made between Reclamation; land managers for BLM, DWR, and CDFG; and private landowners whose property would be affected. These agreements would clarify the terms and conditions under which Reclamation would work on private property. In addition, these agreements would compensate landowners, based on fair market value of identified construction easements, and would hold property owners harmless during construction activities.

Utilities

There are a number of utility features located within and/or adjacent to the site boundaries. Water intakes, power and telephone poles, and water supply lines parallel or cross the Trinity River in a number of locations. These utilities are considered in the project design to ensure that service would not be disrupted.

Construction Criteria and Methods

Construction Process Overview

- Vegetation removal would occur as necessary and in compliance with all regulatory requirements. An expected August 1 start date for clearing and grubbing of vegetation would allow completion of nesting by avian species. Alternatively, vegetation may be removed prior to the start of the nesting season, which is early March for this area.
- Where available, existing roads (activity M) would be used to access the activity areas. New access roads (activity N) and haul routes would be constructed when necessary and restored to a stable condition in accordance with landowner requirements at the completion of the project.
- Excavation would begin on the floodplain to bring it down to grade.
- When specified, finer grained materials (e.g., sand) excavated from riverine activity areas may be stockpiled for use at upland or other riverine activity areas.
- Any riverine treatment areas (e.g., constructed inundation surfaces) that have been compacted from construction activities would be ripped to a depth of approximately 18 inches. The furrows developed by this ripping would ensure that most storm water runoff is retained and filtered on-site so that there is little or no construction-related turbidity. This action would effectively control the release of storm water runoff and turbidity from the site and eliminate the need for use of post-construction sediment-control measures (e.g., silt fences, berms).
- The timing for work adjacent to the river may be affected by river flows. If for some reason the flow is low when construction starts, but it is anticipated that flows would

increase before the floodplain can be excavated, excavation would occur at the lower elevations (adjacent to river) first and at the higher floodplain elevations last.

- In-channel activities would generally take place during low flows (July 15 to September 15 as allowed by the coho salmon in-river work window in NMFS' 2000 Trinity River biological opinion) to create immediate point bars and allow mobilization of in-channel materials at high flows.
- Alcoves and side channels would be constructed from the existing grade down slope. Measures would be taken (e.g., sediment plug, sandbags) to isolate the work area from flowing water. If necessary, pumps would be used to dewater the excavation to inhibit any sediment from entering the river. Typically, reconnecting these features to the river relies on high-flow events. If necessary, the TRRP would remove materials used to isolate these side channels after they have been constructed.
- Final grading would occur as necessary for all activity areas.
- Demobilization of construction equipment and site clean-up would be accomplished consistent with Reclamation requirements.
- Revegetation would take place during wet conditions (fall/winter) and would generally occur in riparian areas to maximize use by fish and wildlife species. Projects would be designed and implemented to achieve no net loss in riparian vegetation (within the project site boundaries) from planting and natural revegetation consistent with the Draft Riparian Revegetation Plan.

In-River Construction

- Where necessary, heavy equipment would be used to grub tree and shrub roots from the edge of the river. Vegetation would often be maintained along the river's active channel to maintain the currently available low-water fish habitat. During root removal, equipment chassis would generally not enter the low-water river channel.
- In-river excavation would generally begin at the far edge of the activity area and work back toward the riverbank so that heavy equipment is on dry land or in shallow water.
- In-river materials or coffer dams may be used to temporarily redirect flow around work areas and to create platforms from which to work. In addition to providing the means for volitional fish passage (upstream and downstream), at least one navigable (by raft/boat) passage through the activity area would remain open at all times.

Traffic Control/Detour

Short-term traffic control is expected and would be in conformance with the following requirements established by the appropriate jurisdictional authority for mobilization and demobilization of heavy equipment or wide-load vehicles:

- Reclamation would coordinate with jurisdictional agencies to identify specific requirements that shall be included for use of existing roadways and haul routes. Requirements may include seasonal or other limitations or restrictions, payment of excess size and weight fees, and posting of bonds conditioned upon repair of damage.
- Temporary construction access may be required; access routes shall be of a width and load-bearing capacity to provide unimpeded traffic for construction purposes.

Staging Areas

Staging areas and storage facilities for the Proposed Project are shown on Figures 4, 5, and 6. These areas would be used throughout the duration of the project activities. Some short-term staging and equipment storage and parking would be needed in the activity areas as the project is implemented.

Air Pollution and Dust Control

Efforts would be made to minimize air pollution and reduce greenhouse gas emissions related to construction operations. Reclamation specifications require that the contractor comply with all applicable air pollution control rules, regulations, ordinances, and statutes. In addition, project contractors would be given educational material about fuel efficiency and the benefits of using vehicles powered by alternative energy sources to enhance awareness of global warming issues. Contractors would also be required to provide recycling bins for on-site waste materials.

Contract documents would also specify that the contractor would be responsible for limiting dust by watering construction site areas used by trucks and vehicles. If water is taken from the river, pump intakes would be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Fire Protection and Prevention

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow applicable regulations of Public Resource Code 4428-4442 during dry periods to minimize the potential for the initiation and spread of fires from the work site.

Water Pollution Prevention

Reclamation would implement water pollution control measures that conform to applicable and appropriate permits. Reclamation would require the contractor to use extreme care to prevent construction dirt, debris, storm water run-off, and miscellaneous byproducts from entering the stream. Some key water pollution control measures that would be implemented by Reclamation are listed below:

- Every reasonable precaution would be exercised and BMPs would be implemented to protect the Trinity River from being polluted by fuels, oils, petroleum byproducts, and other harmful materials and shall conduct and schedule operations to avoid or minimize muddying and silting of the river. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.
- Construction equipment would be cleaned of dirt and grease prior to any in-channel activities. All construction equipment would be inspected daily and maintained to ensure that fuel or lubricants do not contaminate the Trinity River. Spill containment kits would be onsite at all times and, where feasible, berms or other containment

methods would be kept in place around the work areas when performing in-channel work.

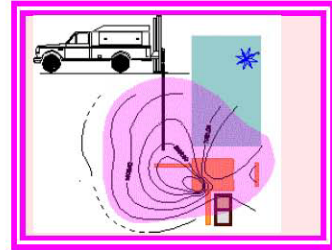
- Water pollution control work is intended to provide prevention, control, and abatement of water pollution in the Trinity River, and would consist of constructing those facilities that may be shown on the plans, specified herein or in the special provisions, or directed by the Contracting Officer.
- Furrowing of riparian areas that have been compacted during construction activity is expected to minimize or stop delivery of storm water runoff to the river. As necessary, Reclamation would provide temporary water pollution control measures, including, but not limited to, dikes, basins, ditches, and straw and seed application, that may become necessary as a result of the contractor's operations.
- Before starting any work on the project, Reclamation would develop an agency-approved SWPPP to effectively control water pollution during construction of the project. The SWPPP would show the schedule for the erosion control work included in the contract and for all water pollution control measures Reclamation proposes to take in connection with construction of the project to minimize the effects of the operations on adjacent streams and other bodies of water. Reclamation would not perform any clearing and grubbing or earthwork on the project until the SWPPP has been accepted by responsible agencies.
- Oily or greasy substances originating from Reclamation's operations would not be allowed to enter, or be placed where they would later enter, a live stream, soil, or groundwater.

APPENDIX B – COMMENTS AND RESPONSES ON THE DRAFT EA/IS

Table B1. Comments received on the Draft Lower Steiner Flat and Upper Junction City EA/IS. These letters are summarized and their comments addressed in the following appendix.

LETTER #	COMMENTOR	AFFILIATION	DATE RECEIVED
1	Mr. Frank Goldman	For Landowner: Mr. Depper	3/19/12
2	Dr. Gail Goodyear	Landowner	3/20/12
3	Mr. Paul Leimer	Interested Party former North California resident	3/20/12
4	Mr. Jim Smith	Landowner	3/20/12
5	Ms. Diana Clayton	Shasta Miners and Prospectors Association: Mining claim holder at Lower Steiner Flat	3/21/12
6	Mr. Neil Manji	Regional Manager, California Department of Fish and Game	3/21/12

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March 19, 2012

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SUBJECT: Comment Letter on Upper Junction City Rehab Project Re: Depper Property

Mr. Bandrowski,

As discussed during our remote WebX meeting, last Thursday, this letter addresses the specific concerns Stuart Depper has regarding the proposed Trinity River Reclamation and how it may adversely impact his property. This discussion and evaluation is based upon the technical reports you provided by email last week, as requested. Although we have not received from you, the Engineering Design Study associated with the grading plans you sent us, or the USGS mercury, in mine tailings, study, we have enough information from other sources to express our concerns. It is assumed that the Engineering Design Study will include plans to control stream bank erosion so that the Depper's property is not damaged. It is assumed that the USGS report will provide a sampling and monitoring plan that will assure that human health on the Depper's property will not be adversely impacted by illegal waste discharges of metals mobilized by the proposed construction activities.

a

This letter also serves to provide some more generalized concerns that are made prior to the public comment period deadline of March 20, 2012 regarding the February 2012 DRAFT Environmental Assessment/Initial Study and Checklist.

The engineered earthwork construction planned to provide Salmon spawning habitat across the Trinity River from the Depper residence located at 519 Dutch Creek, Junction City, CA could adversely impact the Depper's property. In addition, the Depper's property, located on the opposite side of the river, could also be adversely impacted. Specifically, stream bank erosion, degradation of groundwater quality, and the destruction of the Depper's agricultural production operations by bears are predictable outcomes of the proposed stream rehabilitation.

b

Lateral stream channel migration will be caused by the proposed construction which could result in significant stream bank erosion that could threaten the Depper's residence as well as their organic farms and orchards.

c

The Depper's property has only one water supply well which is likely to be adversely impacted as changes in water quality are a direct result of disturbing the streambed. Changes in drinking and irrigation water quality, as well as adverse human health exposure, may result from uncontrolled storm water runoff from earthwork construction stockpiles contaminated with metals such as mercury, copper, and arsenic from mine tailings. Groundwater quality could also be adversely impacted beneath the portion of the Depper's property located across the river where future groundwater development is planned to expand the Depper's agricultural production.

Considering the fact that the North Coast Regional Water Quality Control Board, General Water Quality Certification, May 20, 2010 Order No. R1-2010-0028, essentially states that any wastes (e.g. metals, sediment) generated by construction activities that are discharged to the waters of the state (e.g. surface and groundwater), the Bureau of Reclamation must cease the activities causing the discharge and notify the Regional Water Board so that they can take the appropriate action. We recommend that a sampling and monitoring plan be implemented prior to the proposed work to establish a baseline that can be used to compare with future sampling events. The pertinent sections referred to in the above General Water Quality Certification are shown as follows:

8. *No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete washings, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature, other than that authorized by this Order, shall be allowed to enter into or be placed where it may be washed by rainfall into waters of the State. When operations are completed, any excess material or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream.*

1. *This Order covers sediment discharges and temperature impacts associated with the channel rehabilitation activities. This Order does not authorize any other discharges, for example, it does not cover discharges of hazardous material or human waste.*
2. *If, at any time, an unauthorized discharge to surface water (including wetlands, rivers or streams) occurs, or any water quality problem arises, Reclamation shall cease the associated project activities immediately until adequate BMPs are implemented. The Regional Water Board shall be notified promptly and in no case more than 24 hours after the unauthorized discharge or water quality problem arises.*

LATERAL STREAM CHANNEL MIGRATION ASSESSMENT

Much can be done to assure that all reasonable efforts are made, prior to construction, to prevent significant erosion of the stream banks located adjacent to the Depper's property. If damage to the Depper's residence or their income producing property is caused by construction activities resulting in stream bank erosion, the Depper's should be financially compensated.

In order to avoid this scenario, preliminary management recommendations can be developed, based on field reconnaissance, to alleviate the effects of meander migration which can protect streamside property against bank erosion.

Although meander migration is a natural phenomenon that occurs without human influence, it can be exacerbated by construction activities that create conditions such as channelization, loss of channel sinuosity, and/or excessive bedload.

Erosion protection is commonly accomplished by increasing the resistance of an eroding feature by using hard armor or reducing the driving force.

A detailed design analysis, including a hydrologic/hydraulic analysis, should be conducted to determine a strategic placement of in stream structures that will center the thalweg to reduce near-bank shear stress. Also, vegetated rock toe armor and stream barbs along the outside of meanders would protect eroding banks from toe scour, and direct the thalweg away from sensitive parts of the Depper's property. Erosion control measures or other techniques should be developed to prevent overbank erosion.

f

WATER QUALITY ASSESSMENT AND MONITORING

Given the assumption that the groundwater beneath the Depper's property is under the influence of the surface waters of the Trinity River, introduction of sediments to the river during construction and/or stream reclamation activities could adversely impact the beneficial uses of groundwater.

The cost of establishing an inorganic chemical baseline for groundwater quality for drinking water and irrigation uses should be the responsibility of the Bureau of Reclamation. In addition, any continued laboratory analyses and water supply production issues should also be addressed and paid for by Reclamation if the existing water supply well groundwater quality is impaired (e.g. causes reduced water quality and or inundation of the well) by the proposed reclamation activities. This includes, but is not limited to, replacing the existing water supply well, installing an additional water supply well on the portion of the Depper's property located on the opposite side of the Trinity River, and providing a continued source of water for all and future personal and business development needs, in perpetuity, until sustainable water resources are economically secured onsite by the Bureau of Reclamation.

g

HAZARDOUS MATERIAL DISCHARGE ASSESSMENT AND MONITORING

There is a concern that the metal contaminated mine tailings located on the property adjacent to the Depper's property as well as the soils to be stockpiled on the mine tailings could leach out onto the Depper's property. In addition, metals adsorbed to dry stockpiled soils could be transported as fugitive dust onto the Depper's residence causing adverse health impacts. The cost of this sampling, analysis, monitoring, and post verification sampling should be paid for by the Bureau of Reclamation.

h

THREAT OF BEARS DAMAGING ORGANIC ORCHARDS AND VEGETABLE GARDENS

There is a concern that bears traveling to the Salmon spawning areas will forage through the Depper's organic agricultural production areas and destroy their ability to do business. There have been a few isolated incidences where orchard trees were destroyed by bears on the Depper's property. Allowing bear foraging on the Depper's property, unimpeded, could prove to be devastating to the Depper's business. Reclamation should provide electric fencing around the Depper's property to prevent the completely predictable outcome. The TRRP Master EIR Draft states that the bears do forage and hunt along the banks of the Trinity River as shown below:

i

Recreation: Land Based (Management Guide pp. IV-7 through IV-8):

All interpretive signing within the NRA will be coordinated between Recreation and other resource program areas to insure consistency in message and presentation. Applicable recommendations from the NRA Interpretive Plan will be incorporated as opportunities arise.

Emphasis will be given to maintenance and replacement of directional signs with the NRA.

Bear management in NRA recreational facilities will include the provision of bear-proof facilities, such as dumpsters and food lockers in high bear concentration areas, an active education/signing program, and coordination with California Department of Fish and Game (CDFG).

All design opportunities to develop or improve recreation facilities will take into consideration higher development level needs of RV users and accessibility for disabled.

4.7.1 Environmental Setting

Riparian vegetation is most prevalent along the Trinity River from the Lewiston Dam downstream to the confluence with the North Fork Trinity River. This reach includes approximately 330 acres of early successional, willow-dominated vegetation; 170 acres of more mature, later-successional, alder dominated vegetation; and 380 acres of willow-alder mix (U.S. Fish and Wildlife Service et al. 1999).

Between the North Fork and the South Fork, the mainstem Trinity River channel is constrained by canyon walls that limit riparian vegetation to a narrow band. In comparison to upstream reaches below Lewiston Dam, peak flows in this reach have been less affected by dam operations. Between the South Fork and the Klamath River, the Trinity River alternates between confined reaches with little riparian vegetation to alluvial reaches with vegetation similar to pre-dam conditions in the reach between Lewiston Dam and the North Fork. At Trinity and Lewiston reservoirs, plant species consist of those typically found in standing water and include floating species, rooted aquatic species, and emergent wetland species.

Emergent wetland and riparian vegetation is constrained by fluctuating water levels and steep banks. Many wildlife species that inhabited river and riparian habitats prior to the TRD still occur along the Trinity River, although species that prefer early-successional stages or require greater riverine structural diversity likely occurred in greater abundance prior to the TRD. Species commonly present prior to the TRD likely included the rough-skinned newt (*Taricha granulosa*), western aquatic garter snake (*Thamnophis couchi*), foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Actinemys marmorata*), and American dipper (*Cinclus mexicanus*). Wildlife species that foraged on the abundant Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) runs, such as the black bear (*Ursus americanus*), bald eagle (*Haliaeetus leucocephalus*), and other scavengers, were also common along the pre-dam Trinity River (U.S. Fish and Wildlife Service et al. 2000).

Sensitive Noise Receptors

Wildlife that use the project sites are also considered sensitive noise receptors. Bear, deer, foxes, and raccoons are among the common terrestrial species known to forage and hunt along the banks of the Trinity River.

CONCLUSIONS AND RECOMMENDATIONS

Reclamation should address and pay the Depper's for the inconveniences that will be associated with the Trinity River reclamation activities. If a relationship develops that is cooperative and fair, the Depper's will consider allowing Reclamation to access and use their property to reduce the cost of reclamation activities.

Sincerely,



Franklin J. Goldman
Certified Hydrogeologist No. 466

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Response to Comment Letter 1

This comment letter contains 10 distinct comments. Following are the summaries and responses to those comments.

Commenter Name	Comment #	Comment Summary	Response and Action Taken, If Any
Mr. Franklin J. Goldman, for Landowner: Mr. Depper	1a	Concerned about the proposed project impacts to Mr. Depper's property. Assumes that the project plans include stream bank erosion controls and sampling and monitoring plans to ensure human health.	<p>The Trinity River Restoration Program (TRRP) is concerned about the potential effects of our restoration projects on the health of both human and wildlife populations along the 40 mile Trinity River restoration reach. Consequently, we have worked with the U.S. Geological Survey (USGS) to sample sediment, water, and biota from several of our recent (and some future) rehabilitation sites. Samples have been analyzed in order to determine potential risks to health and safety which might arise from project implementation. Specifically, samples have been analyzed for the potential impacts of metals and mercury which may directly or indirectly result from implementation of the Trinity River Record of Decision (ROD). We believe that the results of that work are applicable to work proposed on your property, but would like to work with you in site specific pre and post project sampling in order to evaluate this assumption. As requested, we would like provide you with a draft sampling plan for use on this property to assure that human health will not be adversely affected by TRRP proposed work.</p> <p>The TRRP is now working with the USGS to coordinate sampling in areas where their past sampling indicates that our project activities might affect future concentrations of methylmercury. The USGS has suggested that low flow depositional areas where temperatures are relatively high and organic materials are abundant may be zones where the potential to transfer methylmercury up the food chain is possible. Proposed monitoring would evaluate the availability of mercury, and its potential environmental impacts, in low velocity side channel and wetland habitat, which we are creating within the floodplain areas. Though these relatively warm and productive side channel areas may have increased potential for methylation of mercury, and potential impacts to fish and wildlife, other areas, where the water flow remains consistent and cold (e.g., infiltration wells), would realize no increased risk of mercury contamination from these projects.</p> <p>As for erosion, water is currently scouring the banks of the project area. Erosion along the Trinity River is a natural process, which changes each year based on river conditions, natural river flows, and spring dam releases. The TRRP embraces erosion and deposition as natural allies in our efforts to create a diverse and functioning river channel with habitat for all life stages of juvenile salmonids available. Impacts from erosion are considered significant if this erosion would expose people or structures at risk of significant injury. To minimize these effects, the TRRP has worked with landowners along the river to protect and improve their infrastructure (e.g., porches, pump houses, walk ways, etc.) and to ensure safe drinking water sources will not be impacted during dam release events.</p>
	1b	Concerned about adverse impacts including stream bank erosion, degradation of groundwater quality, and destruction of agricultural production.	Both river banks are currently eroding in the area referred to. The left bank has retreated at least 30 feet in the past few years and the right bank has also eroded significantly, as evidenced by the toppled vegetation. The proposed action will likely reduce erosion along both banks. The left bank will be protected from further erosion by a constructed bar (IC-4 in Figure 6). Erosion along the right bank is currently focused near the property boundary at river mile 79.9 (Figure 3). The proposed action will

		<p>likely cause the point of maximum shear stress where flows impinge on that bank to move upstream into the IC-5 area (Figure 6).</p> <p>We are aware of no mechanism by which the proposed action could affect the quality of groundwater in the area. Perhaps the comment refers to short term turbidity impacts on in-river filtration systems.</p> <p>Concerns about agricultural production are addressed in response #1i.</p>
1c	Concerned that stream bank erosion will impact the property.	<p>The proposed action will likely reduce erosion of the left bank adjacent to the commentor's residence. Hydraulic modeling indicates that the constructed bar along the left bank upstream from the property will protect the bank in this area by creating an eddy zone. Modeling shows that the structure will have little or no effect at the downstream end of the property. Please refer to response #1f, as well.</p>
1d	Concerned that surface and ground water quality will be impacted. Adverse impacts to human health related to disturbance of mine tailings.	<p>As touched on in response #1a, the TRRP has completed monitoring of water quality and evaluations that address the potential for contamination of river water quality and wells which may result from implementation of our project activities. One source of potential water quality impairment of the Trinity River is mercury. Although the river is not listed under Section 303(d) of the Clean Water Act for mercury impairment, elevated concentrations have been found in water, sediment, and biota (i.e., fish, frogs, and predatory aquatic insects) in the upper Trinity River basin upstream of Lewiston Dam (USGS, unpublished data). Biological samples (such as larval invertebrates collected from wetland samples) taken from the Trinity River downstream of Lewiston Dam (40-mile reach) generally have been low in mercury and methylmercury concentrations. Studies that focus on the river downstream of the Trinity River Division (TRD) and specifically at TRRP mechanical channel rehabilitation projects constructed over the past several years are ongoing. The general significance of mercury as a biological toxin and the likely sources of mercury in regional and local contexts are discussed in section 4.13, Hazards and Hazardous Materials, of the Trinity River Master Environmental Impact Report (EIR).</p> <p>Early in the planning phases for the mechanical channel rehabilitation projects along the Trinity River, the TRRP recognized the possibility that mercury in placer tailings and/or fluvial fine sediments could be disturbed and mobilized by the rehabilitation activities. The USGS has monitored mercury levels at the TRRP Hocker Flat site; the monitoring suggests that the alluvial materials that are subject to project related disturbance contain levels of mercury well below the numeric criteria promulgated by the EPA for priority toxic pollutants. The levels are also well below the narrative threshold, which states that toxic substances should not be in such concentrations that they produce detrimental physiological responses in humans or aquatic life (North Coast Regional Water Quality Control Board 2011). Furthermore, sequential chemical extraction testing of placer tailings and floodplain sediment containing from 24 to 104 ng/g (parts per billion (ppb)) mercury has found that mercury concentrations in water that leached through sediments were very low, ranging from 1.1 to 4.2 ng/L (parts per trillion (ppt)) (USGS, unpublished data). Under the California Toxics Rule, the numeric water quality criteria for mercury (total recoverable) in inland surface waters is 50 ppt (EPA 1999). The mercury concentrations in the waters of the Trinity River downstream of the TRD were found to be well below the water quality objective</p>

			<p>under all flow regimes, both prior to and after the completion of channel rehabilitation activities at the Hocker Flat and Canyon Creek sites (Rytuba et al. 2005). Overall, the USGS's assessment of site-specific methylation data suggests that the bioavailability of mercury in the Trinity River and its floodplain is not presently high and will not likely be modified by the activities described in Chapter 2 of the EA/IS.</p> <p>From the Master EIR: Toxicity concerns in the Trinity River focus on polluted runoff from abandoned mines and mining activities, sediment released from subdivision development, land uses (e.g., road use and timber management) in areas susceptible to surface erosion and mass wasting, septic tank use, aboveground and underground tanks, and lumber mills. The accumulation of the toxin mercury in aquatic biota is well documented throughout the Trinity River basin. Under EPA's California Toxics Rule, the total allowable concentration of measured mercury in unfiltered water should not exceed 50 ppt (EPA 1999).</p> <p>Mercury levels above this concentration could result in adverse health effects to humans and aquatic life. Overall, the USGS's recent assessments of site-specific methylation data from several channel rehabilitation sites (e.g., Hocker Flat and Indian Creek unpublished data) suggest that the bioavailability of mercury in the Trinity River floodplain is not high and will not be increased by broad-scale project implementation. These toxins are addressed in section 4.5, Water Quality. Based on USGS's assessment of environmental conditions and monitoring data from the Hocker Flat and Canyon Creek sites (and limited sampling at Indian Creek, Dark Gulch, and Lowden Channel rehabilitation sites, USGS unpublished data), conditions are not generally present that would result in methylation of mercury, creating methylmercury, which is bioavailable for uptake through the food web. Consequently, disturbance of gravels or sediments at the channel rehabilitation sites resulting from activities described in Chapter 2 of the EA/IS would not be expected to result in a measurable increase in current background mercury or methylmercury concentrations in the environment.</p>
	1e	<p>Cites the North Coast Regional Water Quality Control Board, General Water Quality Certification, May 20, 2010 Order No. R1-2010-0028, which states Reclamation must cease activities that result in discharge of any wastes (e.g. metals, sediment) generated by construction activities and notify the Regional Water Board so that they can take the appropriate action.</p> <p>Recommend a sampling and monitoring plan be implemented to establish a baseline for water quality.</p>	<p>As requested by the commentor, the TRRP has agreed to sample water quality in the commentor's well prior-to and post-project. Analyses would be conducted to monitor the effect of the project on the well water quality and to ensure that human health is protected. The TRRP has a Mitigation Monitoring and Reporting Program (MMRP) in place for all of its projects that are authorized under general water quality certification Order no. R1-2010-0028. According to this MMRP, which has been updated slightly for the proposed Upper Junction City (UJC) and Lower Steiner Flat (LSF) Project and is included in Appendix A of the EA/IS, monitoring will occur pre- and post-project as well as during the project. The project is covered by the environmental analyses included in the Master EIR for TRRP sediment management and channel rehabilitation activities (Water Board and Reclamation 2009). Included in these mitigation measures are requirements to ensure that impacts to water quality do not occur during project construction. Foremost among the monitoring requirements are those to monitor sediment discharges to the Trinity River included in Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e of the EA/IS, and listed in Appendix A of the EA/IS.</p>
	1f	<p>Take actions prior to construction to prevent stream bank erosion.</p> <p>Financial compensation should occur for any damage to Depper's</p>	<p>Bank-stability analyses were conducted at two downstream locations along the left bank adjacent to the commentor's parcel to determine the impacts, if any, of proposed habitat enhancement features. A detailed independent analysis was</p>

		property. To avoid the need for compensation preliminary management recommendations should be developed to avoid bank erosion. Need a detailed analysis to determine placement of instream structures to protect the bank.	conducted of design versus no action (existing) erosion conditions. Results demonstrate that changes in hydraulics due to the planned construction of habitat enhancement features will have little, if any affect on bank-erosion rates along the left bank. See “ <i>Response to Comments Regarding Bank-Stability Issues</i> ” from Cardno Entrix (Dr. Andrew Simon) following this table. Additional analysis of hydraulic model output demonstrates that construction of the project will reduce shear stresses and erosion rates along the right bank adjacent to the Depper property. See the response “ <i>Pertaining to the Right Bank at UJC</i> ” written by the TRRP’s Dr. David Gaeuman following this table.
1g	Concerned about adverse impacts to beneficial uses of groundwater. Need to establish an inorganic chemical baseline for groundwater quality. Reclamation is responsible for addressing any impairment.	Reclamation has been working with local landowners along the Trinity River restoration corridor to ensure that flow impacts to existing wells are mitigated via our well and sewer grant program. If your well was in place prior to 2006 high flows, then you may be eligible for assistance from this program to ensure that your supply of potable water remains safe and available. The TRRP will work with you to determine your eligibility for assistance under this program. It is the responsibility of the landowner to develop new wells as needed for future development. As for the quality of the water that may be recovered from wells on your property, the USGS has sampled water and groundwater from near and on the site. Samples from the river-left property upstream of the Depper’s property were collected in summer 2010. These samples have all had low mercury concentrations (<0.006 ppb) in the water samples. The TRRP would like to use this opportunity to continue similar monitoring at this location and will work with the landowner to develop an appropriate sampling plan.	
1h	Concerned about impacts from leaching metal contaminants. Reclamation should conduct sampling and monitoring.	This concern was raised at the Hocker Flat channel rehabilitation site during 2005 construction. Leach testing conducted by the USGS found that only a small fraction of the mercury present, less than 5%, is leached from sediment and stacker cobble tailings by deionized water and pH 2 water, indicating limited release of water soluble mercury. Most of the mercury in the sediment and the stacker cobble tailings is in the form of organic bound mercury (30-65%), elemental mercury (15-25%), and mercury sulfide (15-45%). The speciation data indicate that limited soluble mercury would be leached from spoil materials by rain or groundwater and would not be expected to exceed the federal drinking water standard (2 ppm) or the California Toxics Rule standard to protect drinking water sources (0.05 ppb). Given the planned placement of river edge spoils higher in the floodplain, it is expected that soluble mercury released from spoils would be adsorbed onto sediment as it filters downward, before reaching ground or river water. Sampling from areas adjacent to the Hocker Flat rehabilitation site confirmed these expectations that ground water mercury concentrations would not be affected by TRRP rehabilitation activities. Near Hocker Flat, the USGS sampled the Junction City well, located adjacent to the school, and several groundwater wells, after restoration had been completed. Anion concentrations (Cl, F, NO ₃ and SO ₄ are listed in Table 1, which is presented after #1f responses by Dr. Andrew Simon and Dr. David Gaeuman) were all very low and comparable to concentrations in Trinity River water from both the well and piezometer waters. Twenty-eight major and minor elements were analyzed in waters from the Junction City well and piezometers (see Table 2, which is presented after #1f responses by Dr. Andrew Simon and Dr. David Gaeuman). All trace metals were present at very low	

		<p>levels and comparable to concentrations measured in the Trinity River. Thirteen of the elements were present at levels that were below the detection limit of the ICP-AES analysis completed in the USGS Analytical Laboratory in Denver, CO. Hg concentrations in waters were measured by the Brooks Rand laboratory using ultra clean procedures. Hg concentrations in unfiltered waters were all very low (0.5-2.73 ng/L) and concentrations in filtered waters were extremely low (0.1-0.55 ng/L) (Table 2). The Hg concentrations in both unfiltered and filtered waters are comparable to concentrations in the Trinity River water. These concentrations are well below both EPA and California Toxics Rule limit of 50 ppt for protection of aquatic life (EPA 1999).</p> <p>The pathway for exposure to mercury in humans is through the consumption of fish that are contaminated with methylmercury. This exposure pathway is well understood and the basis for both US EPA and California fish advisory consumption levels. Dermal and inhalation pathways of Hg exposure only occur under rare conditions where concentrations of Hg are very high. These conditions are not present in the Trinity River ecosystem.</p> <p>Finally, recent evaluations by the USGS in historic dredger ponds indicates that these warm areas of inconsistent flow and available organic material, in association with historic sluice sands from dredging activities, may create conditions that have the potential to promote methylation of mercury and to increase long-term mercury bioavailability through the food chain. This would occur as mercury is leached from sluice sands and is methylated in side channel and wetland habitats that are developed. In these discrete areas, where high temperatures, organic material, and sluice sands exist, concentrations of bioavailable methyl mercury may increase overtime. The TRRP is working with the USGS to develop a monitoring program for locations like UJC rehabilitation site side-channels and wetlands.</p>
li	Bear foraging could damage Depper's business. Reclamation should provide electric fencing to prevent bear foraging.	<p>Spawning salmon and salmon carcasses have been regularly documented in the vicinity of the Depper orchard. Other black bear food sources, such as blackberries and oaks (Pelton 2000, CDFG 2012) occur adjacent to or near the Depper orchard. These food sources are likely to attract bears to many places along the Trinity River downstream from Lewiston Dam, including the Depper property.</p> <p>The UJC channel rehabilitation project (Project) is designed to enhance fry and juvenile salmonid rearing habitat, and does not contain features that would cause migrating adult salmon, salmon carcasses, or other black bear food sources to become more concentrated and to attract additional bears. Black bear populations in the region have increased for at least three decades (CDFG 2011b), so there is reason to anticipate an increased risk of bear depredation regardless of the Project's impact on salmon abundance. It is the private owner's responsibility to protect their own property from potential bear damage and not the responsibility of the TRRP.</p> <p>In order implement projects on private property, the TRRP will need to develop a contract with the landowner. These contracts reimburse the landowner, at fair market value, for use of their property during construction and revegetation periods. Funding from these contracts may be used for private property improvements such as electrical fencing for bears.</p>
lj	Reclamation should address and pay the Depper's for the inconveniences that will be	As noted in #li, the TRRP will do no work on private lands without a signed landowner contract that describes the work to be done on the landowner's property and compensation for use of

		associated with the project activities.	their lands. The contract is negotiated with the expectation that both the landowner and the TRRP will develop an agreement that is mutually beneficial. Compensation in terms of work completed and financial remuneration are expected to compensate the landowner for the inconvenience associated with the channel rehabilitation activities.
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Response to Comments Regarding Bank-Stability Issues

Submitted by: Andrew Simon Phd, Cardno ENTRIX, Oxford, MS

April 5, 2012

Bank-stability analyses were conducted for the two downstream sites in the Upper Junction City reach to determine the impacts if any, of proposed habitat enhancement features. To conduct this work the Bank-Stability and Toe Erosion Model (BSTEM) was used to simulate stability conditions under three different scenarios (Simon *et al.*, 1999, 2000, 2011). These were:

1. Calibration run scenario: Initial geometry from the 2009 geometric survey and ending geometry from 2011 using flow data from the downstream USGS stream gage from 2009-2011, and output from SRH-2D hydraulic models for 2 discrete high flow events;
2. No-Action scenario: 2011 geometry using the same 2009-2011 flow series and output from SRH-2D hydraulic models of the reach with no changes imposed to the channel through construction of the upstream restoration project; and
3. Proposed Design scenario: 2011 geometry using the same 2009-2011 flow series and output from SRH-2D hydraulic models of the reach with construction of the proposed upstream restoration project.

To determine potential impact of the upstream design features, BSTEM simulations were conducted using the same discharge rates but with the hydraulics parameters unique to each of the geometries. Hydraulic information was derived from simulations with SRH-2D and the 2009 and 2011 geometric surveys were provided by the Trinity River Restoration Program (TRRP). At two locations on the Depper property located at 519 Dutch Creek, Upper Junction City, CA (Figure 1) amounts of bank erosion under “existing” conditions were then compared to model results obtained for the same 2009-2011 flow series but using “design” hydraulics and 2011 geometry.

The calibration run involved adjusting hydraulic parameters and failure-plane geometry within the BSTEM model until the simulated bank erosion matched that measured from the 2009-2011 sequential surveys. For the initial calibration run, near-bank average shear stress in BSTEM’s toe-erosion sub-model was adjusted to match that derived from SRH-2D by changing bed slope. All SRH-2D hydraulic modeling was completed and provided by the TRRP. For UJC-A this value was adjusted to 0.009 m/m; for UJC-B, 0.0073 m/m. BSTEM was then run for the period 2009-2011. No erosion was observed or simulated at UJC-A for the period 2009-2011. The flow series simulated from 2009 to 2011 used daily average flow records and was obtained from the downstream USGS stream gage (site 11526250) on the Dutch Creek Road Bridge. Figure 2 shows the results of the calibration for the UJC-B site, showing good agreement between the bank profile simulated using BSTEM (Simulated line) and the 2011 bank (GOAL (2011) line). The 2009 line depicts the location of the bank at the start of the BSTEM simulation.

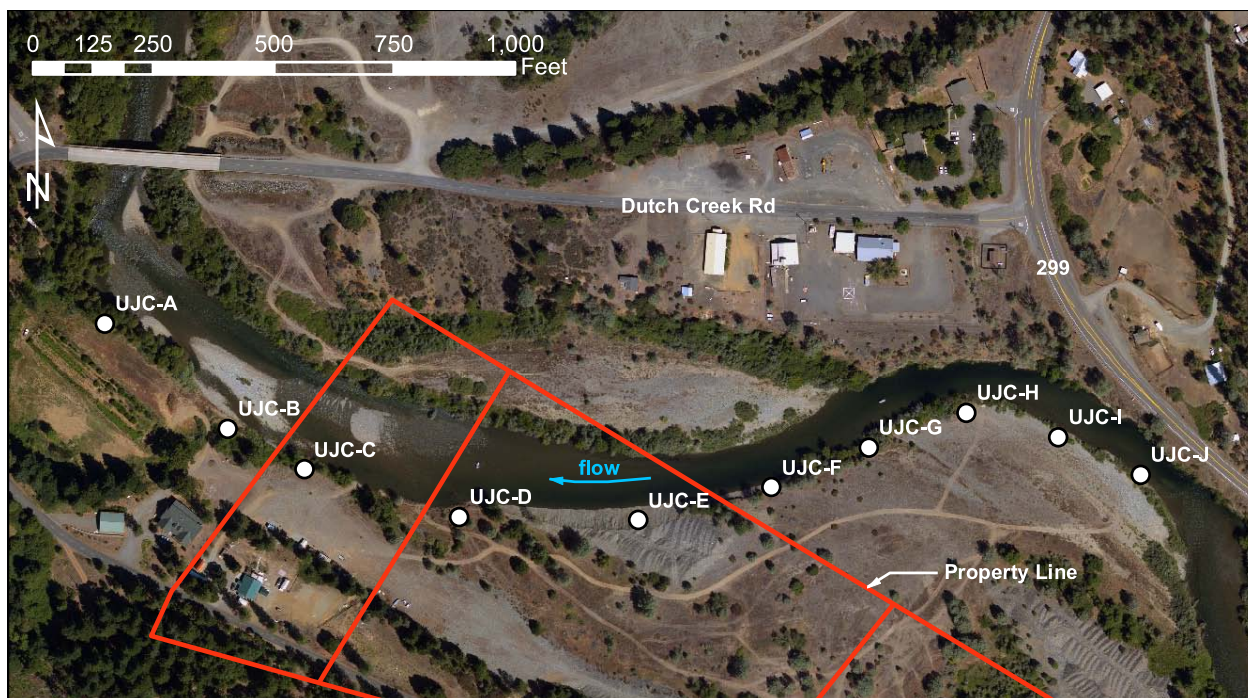
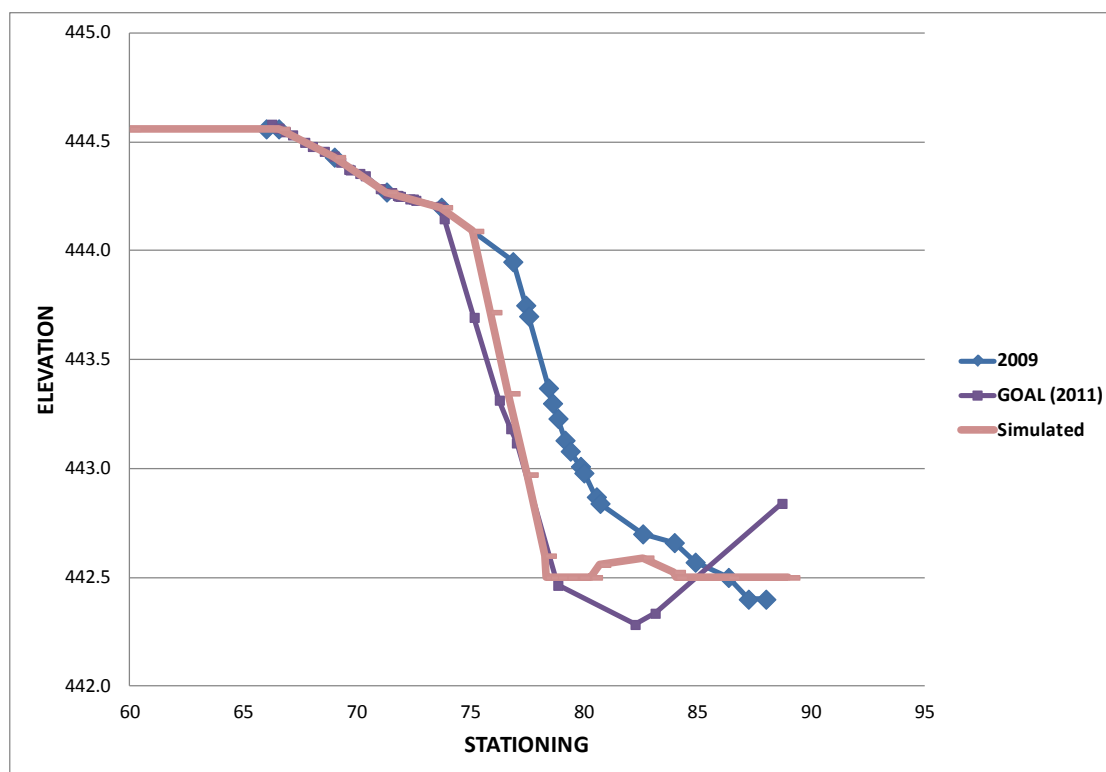


Figure 1. Map showing locations of BSTEM data collection and modeling.

Once the BSTEM model was calibrated the No-Action scenario was developed using the same flow series from 2009 to 2011 and the 2011 geometric survey as the initial condition. The 2010 to 2011 hydrologic period was considered an extremely wet year which allocated the maximum flow release of 11,000 cfs from Lewiston dam. It was used, therefore, as a conservative time-period to model future bank erosion as most bank erosion occurs as a response to toe erosion and bank saturation during high flow events.

The Proposed Design scenario model was developed using the same flow series from 2009 to 2011 and the 2011 geometric survey as the initial condition. The hydraulics within the project reach were altered due to the proposed restoration project. Thus, hydraulics for the proposed conditions and obtained from the SRH-2D hydraulic model was used to adjust the near-bank average shear stress in BSTEM's toe-erosion sub-model to match. This was accomplished by again increasing bed slope in BSTEM to obtain the same increase in shear stress indicated by the SRH-2D output. Amounts of bank erosion under the No-Action scenario were then compared to model results obtained for the same 2009-2011 flow series but for the Proposed Design scenario.

The total amount of bank erosion simulated at UJC-B for the 2009-2011 period under existing hydraulic conditions (scenario #1) was 3.8 m² and closely matches the measured changes in geometry (Figure 2). To obtain satisfactory calibration results, a drawdown of 0.5 m was assumed on the recessional limb of the hydrograph. Hydraulic erosion accounted for 2.5 m² while mass wasting accounted for the remaining 1.3 m². Following this successful calibration, the model was re-run with the measured 2011 bank section as the initial geometry.



Figures 2. Simulated and measured bank erosion at UJC-B for the period 2009-2011.

Changes in average boundary shear stress for the two sites, denoted UJC-A and UJC-B are shown in Table 1 for two important flows in the 2009-2011 flow series (8,500 and 11,000 ft³/s). Depth-averaged shear stresses in the near-bank zone decrease at UJC-A (19-24%) and increase by 26-53% at UJC-B. Again, no erosion was simulated for the UJA-A site as boundary shear stresses decreased by about 20% from existing conditions.

Table 1. Depth-averaged shear stress in the near-bank zone under “existing” and “design” conditions for the two sites.

Site	Shear Stress at 8,500 ft ³ /s (existing; design)	Shear Stress at 11,000 ft ³ /s (existing; design)	Change in Shear Stress (from existing to proposed)
			8,500; 11,000 ft ³ /s
UJC-A	2.70; 2.06	3.09; 2.49	-24%; -19%
UJC-B	28.7; 43.9	42.9; 54.0	53%; 26%;

AT UJC-B, continued bank erosion is predicted under both existing and design flows, with erosion under the design hydraulic conditions being about 15% greater than under existing hydraulic conditions (3.88 m² and 4.47 m³/m, respectively). Table 2 provides details of the amount of simulated erosion by hydraulic and geotechnical forces for each of the three events. The mass failure modeled under both sets of hydraulic conditions assumed (as with the calibration run), that failure occurs on the recessional limb of the third storm event. This is the drawdown condition, generally considered to be the most critical, where some of the confining force supporting the bank that is provided by the water in the channel is lost as the water-surface elevation falls. In this case the water-surface elevation was dropped 0.5 m below the level of the groundwater surface.

Table 2. Simulated erosion for each of the three storm events at UJC-B for existing and design conditions.

Erosion process	Event	Bank Erosion (m ³ /m)	
		Existing Hydraulics	Design Hydraulics
Toe erosion	1	0	0.22
Mass failure	1	0	0
Toe erosion	2	0	0.66
Mass failure	2	0	0
Toe erosion	3	1.61	1.21
Mass failure ¹	3	2.27	2.38
Total erosion		3.88	4.47
% Difference			15.2
¹ Failure occurred under drawdown conditions			

It is important to note that the bank at UJC-B was predicted to fail during recession of the third storm event under both existing- and design-hydraulic conditions with only a 5% difference in the size of the failure block. The differences between existing and design conditions (5% for failure size) and (15% for total erosion) are small enough to be considered the same as they are well within the bounds of measurement and prediction uncertainties. Given that the same resistance values were used for both sets of model runs, potential uncertainty in comparing results stem from how the cross sections were extracted from the 1-m resolution, digital data base. Conditions such as vegetative cover or post-processing of the LIDAR data could influence the adopted bank profile. Since we are comparing this extracted profile to the predicted profile, there could be some error, however minimal and with-in reason. Resulting bank geometries under both modeling scenarios are shown in Figure 3.

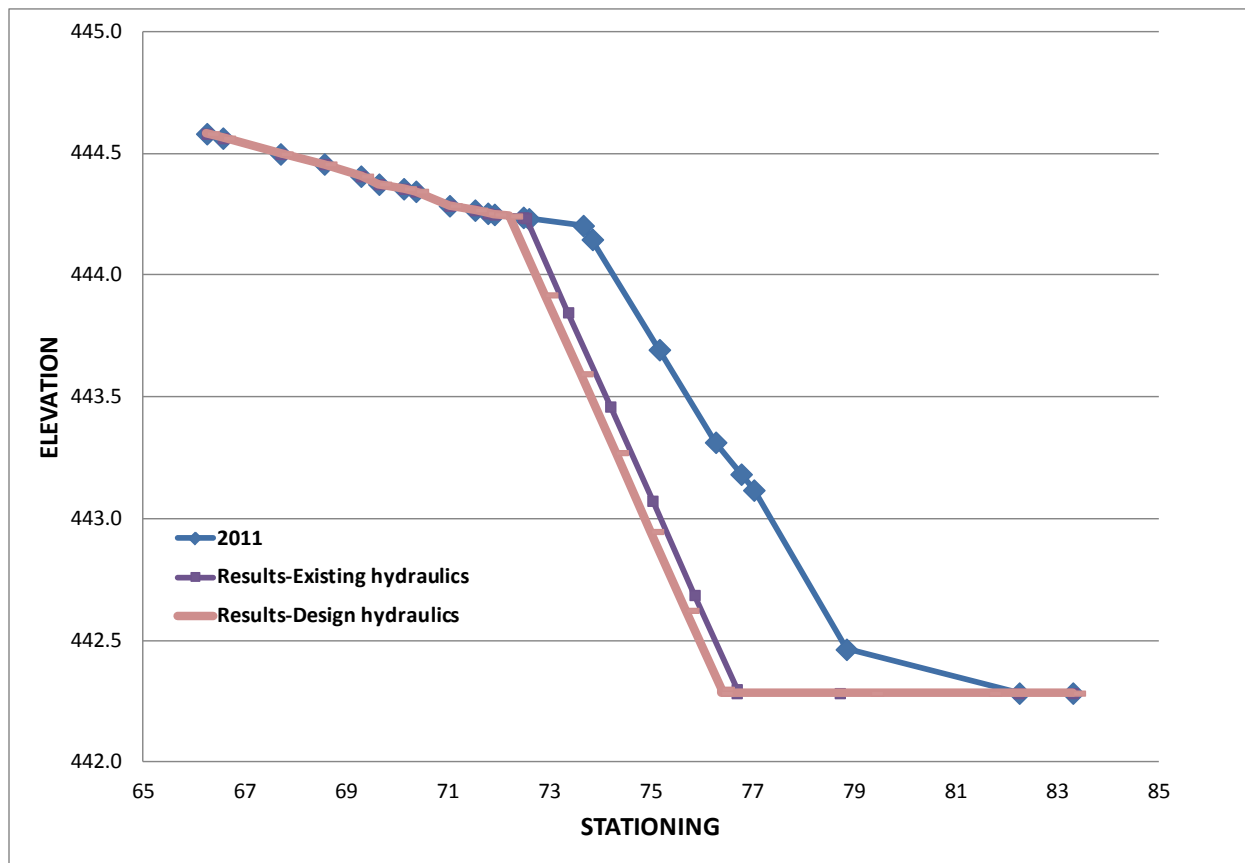


Figure 3. Comparison of simulated bank erosion at UJC-B under “existing” and “design” hydraulic conditions.

Although results are preliminary, it can be generalized that the changes in hydraulics due to the planned construction of habitat enhancement features will have little, if any affect on bank-erosion rates at UJC-A and UJC-B.

REFERENCES

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- Simon, A., Curini, A., Darby, S.E., and Langendoen, E.J., 2000, Bank and near-bank processes in an incised channel. *Geomorphology*, 35: 193-217.
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**Response to Comments Regarding Bank-Stability Issues
Pertaining to the Right Bank at UJC**

**David Gaeuman, Ph.D.
TRRP Geomorphologist**

May 4, 2012

A letter from Franklin Goldman dated April 13, 2012 raised the question of whether the proposed construction at the Upper Junction City (UJC) rehabilitation site would result in increased bank erosion rates along Mr. Depper's property. Analyses performed by Dr. Andrew Simon using the BSTEM bank erosion model indicate that the project is have little effect on erosion rates along the left bank adjacent to the Depper property. Those results are discussed in a separate attachment submitted by Dr. Simon. However, Mr. Goldman has also inquired about modeling and analysis relevant to potential changes in the erosion rate along the right bank. That issue is addressed here.

As part of the overall design process, TRRP conducted 2-dimensional hydraulic modeling of the UJC site using the SRH-2D hydraulic model. Model runs were conducted for a range of discharge rates for variety of purposes, including habitat assessment, prediction of geomorphic change, and other design considerations. These runs included simulation of discharges of 8500 and 11000 ft³/s, which are relatively large flows that are responsible for much of the geomorphic change along the river.

SRH-2D output showing the changes in shear stresses that are expected to result from construction of the UJC project when discharges are 8500 and 11000 ft³/s is shown in Figure 1. The Figures show that the model indicates that construction of the UJC project will result in a decrease in shear stresses along nearly the entire length of right bank through the Depper property at both discharge levels. Local increases in shear stress are indicated in a few small areas, but the magnitude of the increase is small. Overall, the model indicates that construction of the UJC project will either have no effect on the potential for bank erosion along the right bank adjacent to the Depper property or will reduce the potential for erosion.

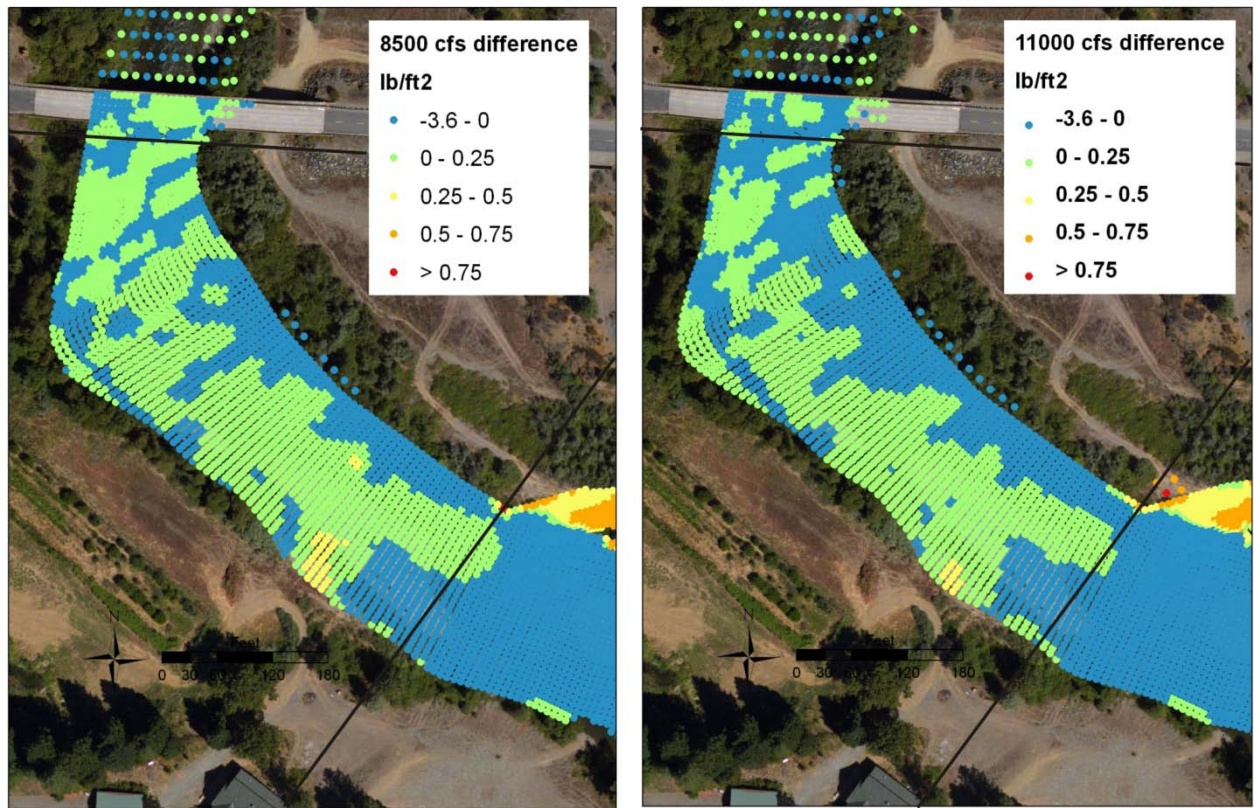


Figure 1: SRH-2D output showing change in shear stress magnitude related to construction of the UJC project in the vicinity of the Depper property when discharges are 8500 ft³/s (left) and 11000 ft³/s (right). Blue indicates a decrease in shear stress, and green indicates a slight increase (< 0.25 lb/ft²). The solid black lines show the approximate locations of the Depper property boundaries.

Tables 1 and 2 provide information from Junction City area wells and water that responds to comment 1h.

Table 1. Anion concentrations in waters from well and piezometers.						
Lab No.	Field No.	Sample Description	Cl (ppm)	F (ppm)	NO ₃ (ppm)	SO ₄ (ppm)
C-268482	05PC1	Piezometer #1	3.7	<.08	<.08	3.2
C-268483	05JCE1C	Junction City well outlet	5.3	<.08	0.4	4
C-268484	05JCE2C	Junction City well outlet replicate	5.3	<.08	0.4	4
C-268485	05JS15C	Jim Smith piezometer	48	<.08	1.3	8.2
C-268488	05HFP1CC	Piezometer #1	3.5	<.08	<.08	3.1
C-268491	05HFP8C	Trinity River at 1800 cfs	2.5	<.08	<.08	3

Table 2. Concentrations of major and minor elements in waters from well and piezometers.																		
Lab No.	Field No.	Sample Description	Hg (total)	Hg (filtered)	Al	B	Ba	Ca	Fe	K	Li	Mg	Mn	Na	Ni	SiO ₂	Sr	Zn
			ng/L	ng/L	ug/L	ug/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	ug/L
C-268499	05PA1	Piezometer #1	2.42	0.64	22	7	14	10.2	32	0.54	<1	6.9	10	2.8	<10	16.4	46	<10
C-268500	05JCE1A	Junction City well outlet	0.5	0.45	<10	12	19	14.5	<20	0.52	1.3	7.7	<10	3.7	<10	14.6	66	<10
C-268501	05JCE2A	Junction City well outlet Replicate	0.84	0.51	<10	12	20	14.5	<20	0.75	1.1	7.6	<10	3.8	<10	14.6	66	18
C-268502	05JS15A	Jim Smith piezometer	2.73	0.24	195	93	37	26.7	297	1.8	<1	20	3170	29.9	11	26.2	93	29
C-268505	05HFP1CA	Piezometer #1	1.22	0.55	64	<5	13	9.7	101	0.58	1	6.7	<10	2.8	<10	15.5	44	15
C-268508	05HFP8A	Trinity River at 1800 CFS	0.66	0.1	391	<5	14	5.5	661	0.53	1.5	7.7	42	2.1	11	14.7	29	80
Elements below detection limit in ug/L: Ag<1, As<100, Be<10, Cd <5, Co<5, Cr<10, Cu<10, Mo<20, P<0.1, Pb<50,Sb<50, Ti<50, V<10																		

Gail Goodyear
P.O. Box 1120 Weaverville, CA
96093 March 20, 2012

Mr. Brandt Gutermuth Trinity River Restoration Program
P.O. Box 1300 Weaverville, CA
96093

RE: Draft Environmental Assessment/Initial Study for 2012 TRRP proposed projects

Dear Brandt:

The impacts, of the Lower Steiner Flat and Upper Junction City projects, need to:

*remove noxious weeds.

☐ a

*limit or eliminate re-vegetation plantings as these create a false river edge. These plantings add to the already increased seed load along the river, and threaten to further the problems of a river choked with vegetation. Historically, during summer and droughts the vegetation would become stressed, die, decompose or wash away in winter storms. A restored river would not have the degree of vegetation it has today.

b

*avoid placement of log jams and numerous large logs/root wads not native to the edge of the river. These place a huge threat to life; private property; river/town access; local jobs/businesses, as well as our county's roads and bridges. TRRP placements, such as these, are not natural. It is not okay to co-opt restoration plans, such as log jams, from (an) area(s) unlike the Trinity River canyon.

c

*protect private land through use of large rock to achieve river restoration goals without the temporary, and litigious, nature of a log jam.

*maintain and/or protect deep holes for adult fish, as TRRP work broadens and flattens the flood plain for fry fish. Plans, current and future, need to include restoration of deep holes destroyed by expected, or unexpected, outcomes of TRRP activity in and along the river.

d

*employ Trinity County residents, as well as generate income for Trinity County businesses through TRRP activity, including work completed by RCD. Justification that social justice has been met will document number of Trinity County residents employed and dollars paid in relation to total labor costs, as well as dollars spent at local businesses in relation to dollars spent outside the county for services. TRRP and RCD timelines need to plan for work to be completed in Trinity County and by Trinity County residents, and if work such as printing a brochure cannot meet a workshop deadline then delay of the brochure release to keep *TRRP*/*RCD* dollars in Trinity County is the priority.

e

Reporting of the outcomes of stakeholder input for these two TRRP projects was misleading both in meetings and in the press. "Consensus of all stakeholders" was not achieved. The consensus process was not used. Nor did the December 18, 2011 meeting or the January 4, 2012 meeting or communications regarding the meetings include all stakeholders. TRRP focused on fishing guides in the input process for these two projects. TRRP needs to refrain from making claims of such unity, as social justice is violated.

The TRRP website has been promoted as the go-to place for information regarding river restoration; however, a failure to communicate occurred in December 2011 when the TRRP website was not up-to-date. The December 18, 2011 TRRP-community meeting was posted on the Trinity Journal website on Friday, December 15th and not on the TRRP website. Also, those from whom TRRP has collected email addresses and telephone numbers were not notified. A select group was notified-a social justice violation. If people have provided TRRP with email and/or mailing addresses and/or telephone numbers, these people are stakeholders.

The content of this letter has been shared at various community meetings, as well as in one-on-one conversations with TRRP staff. The opinions expressed herein have been shared since August 2008.

Thank you for work on behalf of the Trinity River, Trinity County and its people.

Sincerely,

A handwritten signature in cursive script that reads "Gail Goodyear". The signature is written in black ink and is positioned above the printed name.

Gail Goodyear

f

Response to Comment Letter 2

This comment letter contains six distinct comments. Following are the summaries and responses to those comments.

Commenter Name	Comment #	Comment Summary	Response and Action Taken, If Any
Dr. Gail Goodyear, Landowner	2a	Project needs to remove noxious weeds.	<p>As cited in chapter 3 of the Master EIR from which the EA/IS tiers:</p> <p>Executive Order 13112 requires federal agencies to use relevant programs and authorities to:</p> <ul style="list-style-type: none"> • prevent the introduction of invasive species; • detect and control populations in a cost-effective and environmentally sound manner; • provide for restoration of native species; • promote public education on invasive species; and • not authorize, fund, or carry out actions to cause or promote the spread or introduction of invasive species. <p>As directed under this Executive Order, the TRRP must use its limited funding to meet multiple resource objectives, including the control of noxious weeds. Preventive measures have been included in this project to control the spread of weeds on the project site. However, some of the weed species present at the Upper Junction City (UJC) site are ubiquitous in Trinity County and will not be targeted for widespread control. These species, including Himalayan blackberry, Dalmatian toadflax, and star thistle, will constantly reseed themselves from outside of the project areas. Other noxious weed species, which are not so prevalent in Trinity County (dyer's woad and tree of heaven), will be managed on the project site to ensure that these species are not further spread along the river as a result of proposed activities. Section 3 of the final EA/IS has been enhanced to include additional language (which describes on the ground actions and monitoring that will be implemented) to ensure that dyer's woad is not spread during project construction or in the years following implementation.</p> <p>The TRRP will be working closely with other land managers in the area (e.g., the Trinity County Resource Conservation District [TCRCD]) to implement these weed control measures.</p>
	2b	Project should limit or eliminate revegetation plantings.	<p>The TRRP is bound by regulatory authority (agreement with the California Department of Fish and Game [CDFG], the Water Quality Control Board, and the U.S. Army Corps of Engineers [USACE]) to replace riparian vegetation equal in area to that impacted by channel rehabilitation projects. While you are right that the historic mined Trinity River was much less vegetated, the current Trinity River acts more as a headwaters or upper tributary than the historic river in this location. Historic high flows scoured vegetation and low summer flows dried the banks and vegetation out. Current high flows limit the scour of riparian vegetation and summer base flows of 450 cfs have resulted in a more vegetated river corridor. Though different, these are the conditions that the program must operate under in order to restore historic salmonid populations and sustainable riverine processes which support all species of concern.</p> <p>The presently encroached Trinity River is primarily overhung with dense groves of blackberry and narrow leaf willow. In an effort to diversify the riparian vegetation along the river's</p>

		<p>edge, the TRRP plants three native willow species and cottonwoods, as well as assorted fresh emergent vegetation. This more diverse assemblage of vegetation along the managed river supports fish and wildlife in a sustainable and more productive state than would the attempted long-term eradication of riparian vegetation along the river's edge. It is expected that present high flows and variable survival of planted vegetation will result in a naturally patchy distribution of vegetation along the river's edge based on bank geomorphology.</p> <p>Impact 3.6-5 of the EA/IS addresses the required mitigation for shaded riverine aquatic habitat area (SRA) and is equivalent to measure 4.6-5 in the Master EIR from which this environmental document is tiered. Mitigation for impacts to SRA include: Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD. Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFG, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional proactive measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.</p>
	2c	<p>The project should avoid log jams; use large rock instead.</p> <p>The TRRP plans to use boulders with wood to create hydraulic structures within the bedrock lined river at the Lower Steiner Flat (LSF) site.</p> <p>The quantity of woody debris in the Trinity River will increase as the river returns to a more natural condition. Woody debris poses a definite risk to river users, and it is important for river users to be aware of and manage that risk. The best available scientific evidence indicates that the Trinity River did contain abundant woody debris prior to the extensive human modifications that began with the discovery of gold. Not only do the log jams constructed by the TRRP mimic natural conditions, but they are relatively safe compared to many of the natural jams that have already begun to develop in the river. The constructed jams are attached to the bank, and so leave abundant room for river users to pass. They are also packed in such a way as to deflect flow rather than allow flow through the jams. By contrast, natural debris jams can occur anywhere, including locations in the main flow that are difficult to avoid. They also often have water flowing through them, creating sieves that can trap a swimmer. Because of their</p>

			safety-conscious designs, the constructed jams are believed to pose essentially no risk to experienced river users at summer low flow levels. However, all rivers are inherently dangerous for inexperienced users who are not aware of the potential risks, and for all users when in flood.
	2d	The project needs to maintain, protect, and restore deep holes for adult fish.	TRRP recognizes the importance of adult holding habitats and has taken specific actions to protect the existing holes at the UJC and LSF sites. Please refer to section 1.9 of the EA/IS for additional information. The UJC site is designed to reduce floodplain conveyance specifically to maintain pool scour in the upstream part of the site. In addition, channel alignments have been modified and additions of mobile coarse sediments have been removed to ensure that the design will not impact holding pools. Morphodynamic modeling has been performed to verify the hypothesis that the UJC design will not result in pool filling. Similarly, additions of mobile coarse sediment have been removed from the LSF design.
	2e	Concerned about social justice. The project needs to employ residents and help businesses in Trinity County. Costs need to be documented in terms of in-county vs. out-of-county expenses.	There are many examples of how the TRRP employs local people in Trinity County as well as providing additional benefits to the county. Revegetation and weed management is implemented by the TCRCD, which employs local people and keeps money in Trinity County. Local U.S. Forest Service employees are used to collect local seeds for use in the projects. Construction projects have beneficial effects on the community through expenditures on local goods. These are large projects, which partly dictate the types of contractors that can be used for the projects.
	2f	Believes that stakeholder consensus is misrepresented as all stakeholders have not been involved.	<p>Individual citizens may bring their issues to the attention of the Trinity River Adaptive Management Working Group (TAMWG), or may attend Trinity Management Council (TMC) meetings and participate during public comment sessions and open forums. Stakeholders for the TRRP are represented by a federal advisory committee with the Designated Federal Officer being the Regional Director, Pacific Southwest Region (Region 8), U.S. Fish and Wildlife Service (USFWS). Members are nominated by, and represent Trinity County residents, small business owners, whitewater outfitters and guides, agricultural water users, recreational and commercial fishermen, utility companies, local landowners, recreational fishing guides, environmental organizations, and a government conservation agency. Information about meeting dates and agendas are announced in the Federal Register, and meeting agendas are posted on the Quicklink TAMWG on the USFWS Arcata field office website: http://www.fws.gov/arcata/fisheries/tamwg.html. Stakeholders and the public can attend TAMWG meetings. Meetings of the TMC, the decision making body with oversight of the TRRP, are also open to the public. Each meeting has two public comment periods, one at the beginning of the meeting and one at the end. Meetings are planned for the entire year and the www.trrp.net website has a calendar with meeting dates and locations. Draft agendas are made available to stakeholders and the public on the website, through a distribution list anyone can join, and from the TRRP office. The TRRP office is open Monday-Friday from 8:00 am to 4:30 pm. The office also answers telephone and email queries from the public and stakeholders.</p> <p>The December 19, 2012 meeting of the TRRP Design Team with a follow-up face-to-face requested meeting with the Trinity River Guides Association and CWIN was scheduled late Friday evening, December 15, 2011 and was promptly</p>

			<p>posted to the Trinity Journal website, with fliers being posted on public buildings and community bulletin boards. These were the only means available to advertise the meeting within the timeframe. The meeting was a special TRRP technical work group meeting called by the Design Team to address specific questions of a single stakeholder group which had met with the TRRP many times over the past year. The January 4th, 2012 meeting was a special TMC meeting called to provide TMC membership with information on how the Design Team had addressed specific issues raised by stakeholders related to the proposed project. These special meetings were advertised as broadly as possible within the limitations of the short turnaround times requested by the TMC to provide stakeholders and public citizens who had been actively participating in discussions regarding proposed projects with the latest information.</p> <p>The Design Team reached consensus on design features they could change without negatively affecting the project objectives. At the end of the December 19, 2012 meeting the group was “cautiously supportive” of proposed design adaptations to address stakeholder concerns. Stakeholders and the public are cautioned against using media characterizations of meeting or decision outcomes as authoritative.</p>
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Paul M. Leimer
1426 N Windmill Road
Derby, KS 67037

3/20/2012

Mr. Brandt Gutermuth
Trinity River Restoration Program
PO Box 1300
Weaverville, CA 96093

Mr. Brandt,

I'd like to comment on the Lower Steiner Flat and Upper Junction City Channel Rehabilitation Site draft document.

Let me introduce myself. I spent my teen through college years (1970s) living at the Carr Powerhouse area of Whiskeytown NRA as my Dad was Chief Ranger and then Superintendent. I attended Shasta High and college in Chico majoring in Engineering. I have worked in aerospace since graduation, currently in Wichita, Kansas.

I identify with the area and its people. I lived along Clear Creek. I paid attention to its sounds during each season, winter high water levels, summer lows, the streambed-rearranging rumbles. A guy gets to know his stream. I can relate to people interested in "their" Trinity River.

I did have the opportunity to walk the work accomplished at the BLM campground off Steiner Flat Road in October, 2010.

The non-native weeds along the river bank should be removed. The riparian environment should be considered also.

a

The upcoming plan will introduce log jams. This doesn't sound natural let alone safe. Will these log jams require frequent upkeep/maintenance stirring up the habitat?

b

Will the filled in deep holes stay filled in? Will they require monitoring and upkeep stirring up the habitat? Clear Creek yearly filled in holes and excavated others. But Clear Creek did it naturally.

c

What happens to the habitat for large fish if the deep holes are filled in? Are we forgetting them?

It seems in aircraft engineering the design keeps changing because the upstream groups keep fine tuning their requirements. Will these two projects be a continual construction zone of updating requirements causing detrimental situations for wildlife and people?

d

Thanks for considering my two cents.

Paul M. Leimer, P.E.
A350 Lead Engineer
Spirit AeroSystems, Inc
316-523-2119

Wichita, Ks

Response to Comment Letter 3

This comment letter contains four distinct comments. Following are the comment summaries and responses to those comments.

Commenter Name	Comment #	Comment Summary	Response and Action Taken, If Any
Mr. Paul M. Leimer Interested Party, former Northern California resident	3a	The project should remove non-native weeds and consider the riparian environment.	<p>Please refer to response to comments for 2a and 2b.</p> <p>The TRRP again acknowledges the tremendous problem that non-native species create along the Trinity River. We seed and mulch all our disturbance areas with a mix of native grass seed and species which may temporarily occupy the disturbed areas until our native plants have the time to become established. In addition, by increasing the inundation extent and floodplain area, some of the current invasive species, which are more tolerant of dry conditions, will be limited in distribution.</p>
	3b	Questions use of log jams, the safety of these jams, and whether they will require upkeep or maintenance.	No upkeep or maintenance is anticipated for constructed log jams. Please refer to response to comment 2c for information on the safety of log jams and whether woody debris is a natural component of the Trinity River.
	3c	Concerned about filling in deep holes and the loss of habitat for large fish. Also, whether they will require monitoring or upkeep.	Holding habitat has not been forgotten. It is true that some holes in the river have filled, and in some cases the filling may be linked to TRRP activities. Over the past year and a half, TRRP has been collecting bathymetric data to assess the degree of the problem and to determine its causes. Those data are currently being analyzed. The designs for the Upper Junction city (UJC) and Lower Steiner Flat (LSF) sites recognize the importance of the existing holding habitat in the design reaches, and take specific steps to protect it. Please refer to section 1.9 of the EA/IS and to the response to comment 2d for further information on this subject.
	3d	Concerned that continual updates to the two project areas will be required, affecting wildlife and people.	<p>As in the aircraft industry, there has definitely been an evolution in TRRP site designs since the writing of the ROD and implementation of the first channel rehabilitation project at Hocker Flat in 2005. The projects have increased in complexity and in implementing various floodplain habitat features such as side channels, scour channels, and habitat structures. However, despite the evolution in design, the projects continue to be implemented in one construction season.</p> <p>There are no plans to revisit the sites after construction – except in the case of LSF which has two phases, A and B. Phase B at LSF may be implemented at a later date. The current environmental document analyzes the potential environmental impacts from implementation of both Phase A (proposed for summer 2012 implementation) and Phase B (proposed for implementation at a later date). Phase A is depicted in Figure 4 and Phase B in Figure 5 of the EA/IS.</p> <p>Please refer to the response to comment 4d for additional information concerning future construction of Phase 2 sites.</p>

March 19, 2012

Brandt Gutermuth
Trinity River Restoration Program
PO Box 1300
Weaverville, CA 96093
Email: bgutermuth@mp.usbr.gov

RE: Public Comments regarding Proposed Lower Steiner Flat and Upper Junction City Channel Rehabilitation Project and Draft EA/IS.

First, I would like to express my concern that the scale of the mechanical channel restoration completed in Phase 1 and proposed for Phase 2 appears to far exceed the intent envisioned in the ROD and FEIS/EIR. Specifically, the numerous side channels projects, currently exceeding 10 versus the 3 called for in the ROD, and the extensive instream and bank manipulation work including the extensive use of large woody debris. I believe, as others, that the originally intent was to less intrusively un-cuff the river enough to allow the natural processes through higher flows take hold, re-shape and establish a natural system.

a

This change in restoration direction appears due to the Program's administrative concerns (funding and timelines) and not necessary "good science". The Program has take a course to aggressively mechanically reshape much of the river resulting in many cases "unnatural" looking riverine areas including the numerous side channels. This aggressive re-shaping has contributed to significant amounts of gravel and fines entering the river system effectively filling in deeper holes and runs used by the adult fish. This view is supported not only from extensive personal observation and history but others including professional fishing guides who regularly use "float and fish" the river. All agree that adult fish holding areas adjacent to these construction sites have significantly degraded due to their filling in with gravel and fines.

b

While this hurried strategy may provide more immediate results for administrative purposes it is causing significant harm to the recreational fishing and esthetic qualities that many of the areas once possessed. It may even be possible that this reduction in adult holding waters, for the benefit of the juvenal fish habitat, could eventually limit the projects ultimate success, at least in the near term. Certainly it will have a negative impact on the quality of fishing and white water recreation (many of the reaches in the upper river have almost become impassable for most recreational users) which is vital to the economic health of the area.

c

It is disturbing that the Restoration Program is only recently acknowledging these concerns. Further, they are continuing with additional construction despite these concerns and the ROD and FEIS's original directive to evaluate effects of Phase 1

d

projects before proceeding with more construction in Phase 2. Although the Program is now attempting to address these concerns quantitatively through bathymetry monitoring I am not confident those results will accurately reflect the true impacts to the adult holding waters. Specifically, it is not just a function of depth but of other elements such as bottom roughness, velocities, and contours which will likely not be evaluated effectively in the results. For example, bathymetric results may show that on average, the mean depth may have only changed some small percentage; but as the saying goes “if your head is in the oven and your feet are in a bucket of ice water, on average you should feel pretty good”. I believe part of these issues stem from the engineering approach the Program embraces rather than a balanced biological one.

e

Two low-flow side channels are proposed in the Lower Steiner Flat site. Both are in the vicinity of adult holding waters and well used recreational fishing runs. I have concerns that these projects will further degrade, as described above, the dwindling number of fishing areas left in the Indian Creek to Dutton Creek stretch. While this project is to incorporate new design technology to minimize this harm I feel it better to experiment on and correct a few of the previously degraded sites in Phase 1 before possibly disrupting new sections of river.

f

I also have concerns that the Steiner Flat project will seriously limit recreational access to that stretch of the river if the boat launch area (Chop Tree) is closed off or limited for a period of two years during construction (assuming phase B will occur the following year.) This is a heavily utilized area not only by fishing guides but all recreational users. The EA/IS states that there are other nearby access points. There are only two other accesses somewhat nearby. Both have limited practicality for either white water recreational use or boat fishing access due to the additional distances or unsuitable road access. The boat access at Chop Tree should remain open at a minimum for the morning and afternoon hours, or another nearby access point or construction staging/access area created.

g

Thank you for the opportunity to comment this project. I like most upper river Trinitarians want to see the river successfully restored but not restored at the expense of those who use and rely on these areas.

Sincerely
James Smith
P.O. Box 52
Douglas City, CA 96024

Response to Comment Letter 4

This comment letter contains seven distinct comments. Following are the comment summaries and responses to those comments.

Commenter Name	Comment #	Comment Summary	Response and Action Taken, If Any
Mr. James Smith, Landowner	4a	Project scale exceeds that initially envisioned; original intent was to allow natural processes to take over. In particular, side channels, extensive instream and bank manipulation, and large woody debris addition, are beyond original vision. Aggressive actions have resulted in “unnatural” looking system.	<p>The Trinity River Flow Evaluation Report (TRFER; U.S. Fish and Wildlife Service and Hoopa Valley Tribe 1999) did recommend placement of three side channels at three different rehabilitation sites within the 40-mile target restoration reach between Lewiston and the North Fork Trinity. These were at the Trinity House Gulch, Bucktail, and Indian Creek sites. However, the Record of Decision (ROD), TRFER, and FEIS/EIR do not preclude building of more than three side channels. Reference for the benefits of side channels from these documents are included below:</p> <p>The ROD described how the TRRP would be implemented and a component of the selected course of action was “establishment of side channel habitat”. The Environmental Assessment and Management (AEAM) approach allowed for adaptation of the Program under Trinity Management Council (TMC) guidance based on sound scientific principles, provided by scientific monitoring and evaluation.</p> <p>The ROD is cited in italics below: <i>This decision recognizes that restoration and perpetual maintenance of the Trinity River’s fishery resources require rehabilitating the river itself, restoring the attributes that produce a healthy, functioning alluvial river system. Therefore, the components of the selected course of action include:</i></p> <ul style="list-style-type: none"> • <i>Variable annual instream flows for the Trinity River from the TRD based on forecasted hydrology for the Trinity River Basin as of April 1st of each year, ranging from 369,000 acre-feet (af) in critically dry years to 815,000 af in extremely wet years;</i> • <i>Physical channel rehabilitation, including the removal of riparian berms and the establishment of side channel habitat;</i> • <i>Sediment management, including the supplementation of spawning gravels below the TRD and reduction in fine sediments which degrade fish habitats;</i> • <i>Watershed restoration efforts, addressing negative impacts which have resulted from land use practices in the Basin; and</i> • <i>Infrastructure improvements or modifications, including rebuilding or fortifying bridges and addressing other structures affected by the peak instream flows provided by this ROD.</i> <p><i>The selected alternative also includes an AEAM Program. The AEAM Program, guided by a TMC established as part of this decision and by sound scientific principles, will ensure the proper implementation of these measures, conduct appropriate</i></p>

			<p><i>scientific monitoring and evaluation efforts, and recommend possible adjustments to the annual flow schedule within the designated flow volumes provided for in this ROD or other measures in order to ensure that the restoration and maintenance of the Trinity River anadromous fishery continues based on the best available scientific information and analysis.</i></p> <p>The TRFER references side channels as below: <i>Juvenile life stages of chinook salmon, coho salmon, and steelhead have divergent microhabitat preferences; with chinook preferring deeper areas with higher water velocities; coho preferred low-velocity conditions such as were present in backwaters, side channels, and pools; and steelhead preferred run, riffle, and riffle-pool transition habitats that provided diverse velocity conditions. The Service and Hoopa Valley Tribe identified 44 potential channel-rehabilitation sites, 3 potential side channel-rehabilitation sites, and 2 tributary delta maintenance sites in the reach between Lewiston Dam and the North Fork Trinity River (Appendix G, Plate 2).</i></p> <p>The AEAM part of the TRFER, in italics below, describes how a combination of channel rehabilitation and flow variability can be used to increase (salmonid) carrying capacity. <i>Reservoir releases and channel-rehabilitation projects should substantially increase carrying capacity (usable salmonid rearing habitat area) within the rehabilitated channel. What is not known is the rate of change or time frame needed to achieve this new channel equilibrium. AEAM will facilitate achieving the salmonid restoration goals. The management actions prescribed include channel rehabilitation in combination with annual reservoir releases based on forecasted water supply and the recommended flow regime for the water-year class based on the hydrographs presented in this chapter. These water year flow regimes, each with unique hydrograph components, provide the inter-annual variability necessary to drive the fluvial processes toward a new channel configuration while maintaining the hydraulic and temperature conditions at levels that are greater in quality than those existing since the closure of the dams.</i></p> <p>The TRFER also mentions the benefits of side channel habitat for salmonids and identifies objectives for physical processes and desired physical attributes of an alluvial river that increase salmonid habitat capacity. Associated features such as undercut banks, side channels, and backwater alcoves, all contribute to a physical mosaic that collectively provides habitat for all salmonid freshwater life stages.</p> <p>From Appendix H: Attributes of Alluvial River Ecosystems</p> <ul style="list-style-type: none"> • Attribute No. 4. Periodic Channelbed Scour and Fill Desired Physical Responses: • Greater topographic complexity of side channels
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			<p>associated with alternate bars, especially distal portions.</p> <ul style="list-style-type: none">• Attribute No. 6. <p>Periodic Channel Migration <i>The channel migrates at variable rates and establishes meander wavelengths consistent with regional rivers with similar flow regimes, valley slopes, confinement, sediment supply, and sediment caliber (Williams and Wolman 1984; Chien 1985, in Poff et al. 1997; Sullivan et al. 1987; Johnson 1994).</i></p> <p>Desired Physical Responses:</p> <ul style="list-style-type: none">• Create side channels through frequent alternate bar reshaping. <ul style="list-style-type: none">• Attribute No. 8. <p>Infrequent Channel-Resetting Floods <i>Single large floods (e.g., exceeding 10- to 20-year recurrences) cause channel avulsions, widespread rejuvenation of mature riparian stands to early-successional stages, side channel formation and maintenance, and off-channel wetlands (e.g., oxbows). Resetting floods are as critical for creating and maintaining channel complexity as are lesser magnitude floods (Sullivan et al. 1987; Poff et al. 1997; Ward 1998).</i></p> <p>Objectives for Physical Processes:</p> <ul style="list-style-type: none">• Construct and maintain (rejuvenate) natural side channels. <p>Desired Physical Responses:</p> <ul style="list-style-type: none">• Increase complexity of natural side channels. <p>Finally, the Mainstem Mechanical Rehabilitation Program section (2.1) of the FEIS/EIR Implementation Plan, describes the rehabilitation sites and side channel rehabilitation sites as “potential.”</p>
4b	Aggressive re-shaping has filled in deeper holes and runs used by adult fish.		See replies to similar comments about adult holding in comments 2d and 3c.
4c	Projects are harming fishing and aesthetic quality, as well as impacting white water recreation and economics of the area.		The approach has not been hurried. Appendix C, the Implementation Plan for the Preferred Alternative of the FEIS/EIR, envisioned completion of half the projects in three years. The thoughtful progression of partnership driven designs, Trinity Adaptive Management Working Group (TAMWG) advice, and TMC direction ensures that many technical experts contribute to the scientific basis for the projects, and ensures, through this complex checks and balances process, that river restoration needs for all stakeholders, the public, and Trust responsibilities, are met.
4d	Need to evaluate Phase 1 projects before Phase 2 construction.		An evaluation of completed Phase I projects was suggested in the Implementation Plan for the Preferred Alternative of the Trinity River FEIS/EIR (Appendix C). Juvenile habitat was identified as a limiting factor for successful restoration of Trinity River fisheries resources. Not enough time has occurred since construction of projects, and only one high flow event, as described in the TRFER (U.S. Fish and Wildlife Service and Hoopa Valley Tribe 1999), FEIS/EIR and ROD for effecting geomorphic change in the river has occurred since 2000. Adult holding habitat has not been identified as a limiting factor, however, current and future monitoring and assessment under the

			<p>AEAM component of the Program will include this as a parameter. The ROD tasked the Program with rehabilitation of the river channel to restore alluvial river attributes. Scour and bed change is a natural process in rivers and establishment of a variable flow regime will facilitate continued change in the river.</p> <p>Please refer to page 10 of the EA/IS for an answer to this comment as well. The TRRP's Scientific Advisory Board (SAB) and an external board of experts are now conducting a Phase 1 Project review and a final report is scheduled for completion by the end of July 2012. In order to realize the rapid systemic change in river form and function required to create juvenile rearing habitat, and ultimately to increase returning adults of all native salmonids, the members of the TMC have directed the TRRP to continue with implementation of rehabilitation projects, which are believed to be non-controversial, while simultaneously evaluating the Phase 1 projects.</p>
	4e	Concerned about true impacts to adult holding waters. Need to evaluate elements such as bottom roughness, velocities, and contours in addition to depth.	The current monitoring effort will determine if and where pools have filled, as well as where pools may have scoured. It is true that a small change in pool depth may correspond to a large change in habitat quality, and this initial monitoring effort will not answer all questions. It will, however, identify pools that have been filled to some extent and should be inspected in more detail to determine whether their habitat value has been compromised.
	4f	Concerned that low-flow side channels will impact adult holding waters and recreational fishing, particularly in the Lower Steiner Flat reach	<p>The Design Team has done their utmost to minimize negative impacts to adult holding waters. The Lower Steiner Flat (LSF) area is heavily affected by bedrock control. The design there recognizes that and is quite minimal. Places where side channel creation has had negative impacts to adult holding (elsewhere) have occurred where major floodplain lowering took place. This is not occurring at LSF. The combination of minimal water diversion into the side channel (<10% of flow), minimal floodplain excavation and the skeletal bar addition (which utilizes oversize cobble) represents the TRRP's concerted effort to maintain holding habitat in the downstream reach (Phase A) at LSF. Construction within the upstream reach (Phase B) has been halted, mostly in recognition of the valuable holding habitat there, pending results of the Phase 1 review. Due to the higher ROD flows, the entire river is experiencing some level of change, which will continue to occur regardless of mechanical rehabilitation activities.</p> <p>The 2012 projection for salmon/steelhead returns in the Klamath Basin is the highest since the 1970's. The Klamath River fall chinook forecast for 2012 is about four times greater than average and the highest forecast on record since 1985. We anticipate that the expected large run sizes will maintain fishing opportunities through this year.</p>
	4g	Concerned that project will limit recreational access to Steiner Flat reach of the Trinity River if Chop Tree boat launch is closed off. Nearby access points are not	The BLM will ensure that other boat ramps in the area will remain open so that recreational access to the project reach will be maintained. The boat launch at Douglas City campground will be open and the boat ramp at the Steiner Flat Feather edge area (SFF – as

		practical for all users.	shown in Figure ES-1 from the 2009 Master EIR), at the first river access point downstream of Douglas City campground, will also be open during the work period. Consequently, access to boat recreation in the LSF area should not be severely impacted by this work. This updated information was added to Section 2.4.2.4 (Tentative Schedule) of the Final EA/IS. This section of the EA/IS also notes that arrangements would be made with the contractor to ensure that, to the extent possible, the “Chop Tree” boat launch within the upstream work area at LSF would be open early in the morning (before 7 am), and in the evening (after 7 pm).
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3/21/12

Brandt,

Thank for taking the time to talk with me.

We have outings on our claims every year, Gold Spot 1,2,3, at Steiner Flat the last week of July, and the members use throughout the year.

We would like to know how the restoration project will affect our ability to use those claims and can those claims be worked without interference. Please let us know how we can work together on this.

a

We would also like to have a presentation to our members if possible, possibly May or June about the Trinity Restoration project.

b

I know our vice-President Donna Davis has been trying to get information to our meetings as well about how this project is affecting our claims.

I look forward to hearing from you
Diana



Shasta Miners and Prospectors
Established 1959

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Response to Comment Letter 5

This comment letter contains two distinct comments. Following are summaries and responses to those comments.

Commenter Name and Affiliation	Comment #	Comment Summary	Response and Action Taken, If Any
Ms. Diana Clayton, Shasta Miners and Prospectors	5a	Concerned about project effects on use of existing claims.	<p>For the summer of 2012, the Shasta Miner's Association will need to find an alternate location for their gathering. The Lower Steiner Flat (LSF) Project is scheduled to start construction in July 2012, and for safety reasons, the project area at LSF will be closed to the public during actual construction. To the extent possible the TRRP and BLM are coordinating with the construction contractor to allow limited boat launches during the period.</p> <p>This mining access question is addressed under Impact 3.3-3 in the EA/IS. At the particular LSF location, new information since release of the Draft EA/IS confirms that the mining claims have been located on a powersite withdrawal and are subject to Public Law 359. BLM has determined that mining on the Project lands would substantially interfere with the channel rehabilitation project and therefore is not allowed. At other locations the wording from the Draft EA/IS remains valid. On page 61 of the Draft EA/IS (page 59 of the Final) the document states:</p> <p><i>"The project could adversely affect mineral claimants or recreational miners by reducing potential flexibility for mining exploration and development. Future consequences to mineral claimants or recreational miners could entail increased reclamation costs, decreased land available for mining or dredging, reduced flexibility in developing exploration and mine plans, and diminished access to mineral claims. Project construction activities associated with the Proposed Project that occur in the river could temporarily or permanently preclude individuals from accessing and actively working their mining claims. Because activities at the Lower Steiner Flat site would occur in two phases the potential disruption to mining would be extended."</i></p> <p>The TRRP will work with claimants of record to minimize conflicts and project related impacts to mining. However, mining related surface disturbances which would adversely impact rehabilitation projects (e.g., mining claims at LSF) and are not consistent with project objectives to enhance natural functions and ecological values while providing fishery habitat, would not be allowed.</p>
	5b	Request a presentation to group members.	<p>The TRRP will plan to attend your May 16 evening meeting in Redding to discuss our project and its interaction with your mining claims. We are aware that Mr. Ron Rogers, geologist from the Redding BLM field office, will also be speaking that evening on the general topic of mining and claims on public lands. Consequently, this will be an opportunity to discuss general mining claims along the Trinity, powersite withdrawals, and their potential interaction with TRRP past, present, and future projects, as well as the specific case at LSF, where your Gold Spot 1, 2, and 3 claims are within the site boundary of the planned LSF Project.</p>



State of California – The Natural Resources Agency
 DEPARTMENT OF FISH AND GAME
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EDMUND G. BROWN, JR, Governor
 CHARLTON H. BONHAM, Director



March 20, 2012

Mr. Dean Prat North Coast Water Quality Control Board 5550 Skyline Boulevard Santa Rosa, CA 95403

RE: Comments on the Environmental Assessment / Initial Study for the Lower Steiner Flat (River Mile 90.2-91.3) and Upper Junction City (River Mile 79.880.4) Trinity River Channel Rehabilitation Sites (SCH# 2008032110)

Dear Mr. Dean Prat:

The Department of Fish and Game (Department) has reviewed the above referenced Environmental Assessment/Initial Study (EA/IS). This EA/IS is tiered to the Trinity River Mainstream Fishery Restoration Environmental Impact Statement and Channel Rehabilitation and Sediment Management for the Remaining Phase 1 and Phase 2 Sites Master Environmental Impact Report Activities (EIS/EIR) (State Clearinghouse # 2008032110). The following comments have been prepared pursuant to the Department's roles as trustee agency with jurisdiction over natural resources affected by the project and as a responsible agency under the California Environmental Quality Act (CEQA).

The proposed Lower Steiner Flat site is located on the mainstem Trinity River at river mile 90.2 to 91.3, three miles downstream from Douglas City, Trinity County. The Upper Junction City site is located at River Mile 79.8 to 80.4, in Junction City upstream of where Dutch Creek Road crosses the Trinity River, Trinity County. Project activities would be part of the ongoing Trinity River Restoration Program's (TRRP) work to restore the anadromous fishery of the Trinity River. The Trinity River is an important tributary to the Klamath River and supports State and federally-listed "Threatened" Southern Oregon/Northern California (SONCC) Coho salmon (*Oncorhynchus kisutch*), SONCC fall and spring-run Chinook salmon (*Oncorhynchus tshawytscha*), and Klamath Mountains Province steelhead (*Oncorhynchus mykiss*).

The Lower Steiner Flat and Upper Junction City Projects (Proposed Project) described in the EA/IS include specific activities within the Lower Steiner Flat and Upper Junction City site boundaries, as well as use of an upland spoil area in the Lower Junction City site boundary that is adjacent to the Upper Junction City site. The activities proposed are similar to those implemented at previous channel rehabilitation sites and include reducing riparian encroachment, large woody debris placement, physical alteration of alluvial features, construction of hydraulic structures (wood and

Conserving California's Wildlife Since 1870

Mr. Dean Prat March 20, 2012
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log features), and removal/replacement of riparian vegetation at strategic locations. The Proposed Project also includes placement of skeletal bars (rock between 6" and 12" diameter) at Lower Steiner Flat, and skeletal bar/ island complexes (rock 6" -24" in diameter for structural integrity and fines < 14" for vegetation growth) at Upper Junction City.

The Department has maintained an active role with other TRRP partners during the planning and design stages of the Proposed Project, and supports the goals and objectives of the Proposed Project to recreate complex salmon and steelhead habitat, enhance natural river processes for the benefit of wildlife, and provide conditions suitable for reestablishing native riparian vegetation.

On March 19, 2011, the Department provided comments on the EA/IS for Wheel Gulch Rehabilitation Site (SCH#2008032110), which included specific recommendations for inclusion of mitigation measures from the EIS/EIR, to ensure adequate avoidance, minimization and mitigation occurs for project impacts. Department staff have read the subject Draft EA/IS and believe it adequately addresses and mitigates any potential Project impacts, through the inclusion of the mitigation measures outlined in our previous letter described above (March 19, 2011), as well as other specific mitigation measures.

a

The Department appreciates the opportunity to comment on this important Project and fully supports the proposed activities. If you have any questions regarding the Department's comments please contact Staff Environmental Scientist Andrew Jensen at (530) 225-2378, or e-mail ajensen@dfg.ca.gov or Staff Environmental Scientist Brad Henderson at (530) 225-2362, or e-mail bhenderson@dfg.ca.gov.

Sincerely,



NEIL MANJI
Regional Manager

cc: State Clearinghouse Post Office
Box 3044 Sacramento, CA
95812- 3044

Mr. Brandt Gutermuth
Environmental Specialist
Trinity River Restoration Program
P.O. Box 1300 Weaverville, CA 96093

Mr. Dean Prat March 20, 2012

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ec: Messrs. Mike Berry, Brad Henderson and Andrew Jensen
Ms. Donna Cobb Department of Fish and Game
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Response to Comment Letter 6

This comment letter contains one distinct comment. Following is the summary and response to that comment.

Commenter Name	Comment #	Comment Summary	Response and Action Taken, If Any
Mr. Neil Manji, California Department of Fish and Game	6a	Believes the EA/IS adequately addresses and mitigates any potential Project impacts through the inclusion of the mitigation measures.	No action taken.